

FIG. 1 (a)

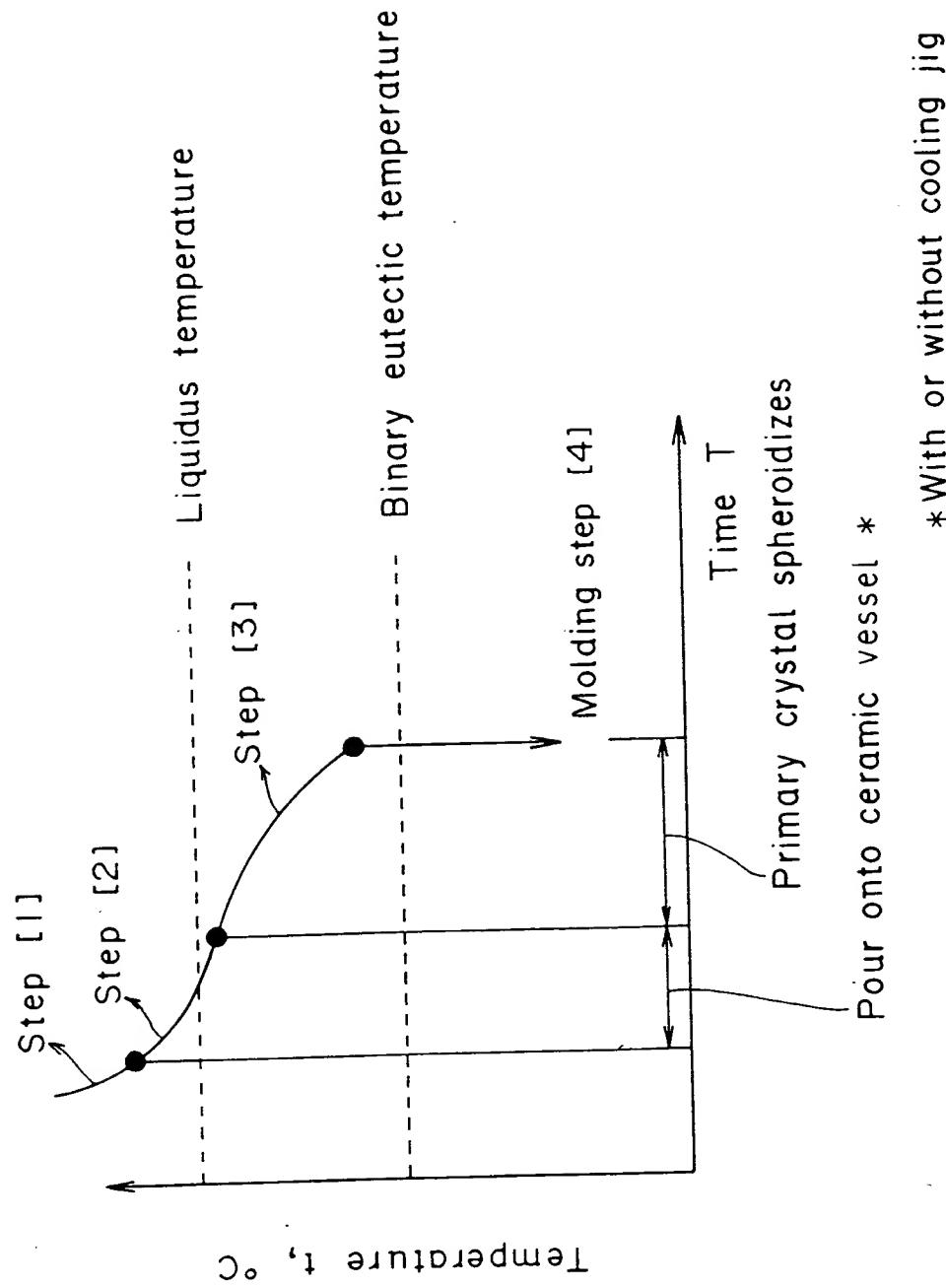


FIG. 1 (b)

Temperature of melt depends on the case and may be higher or lower than the liquidus temperature

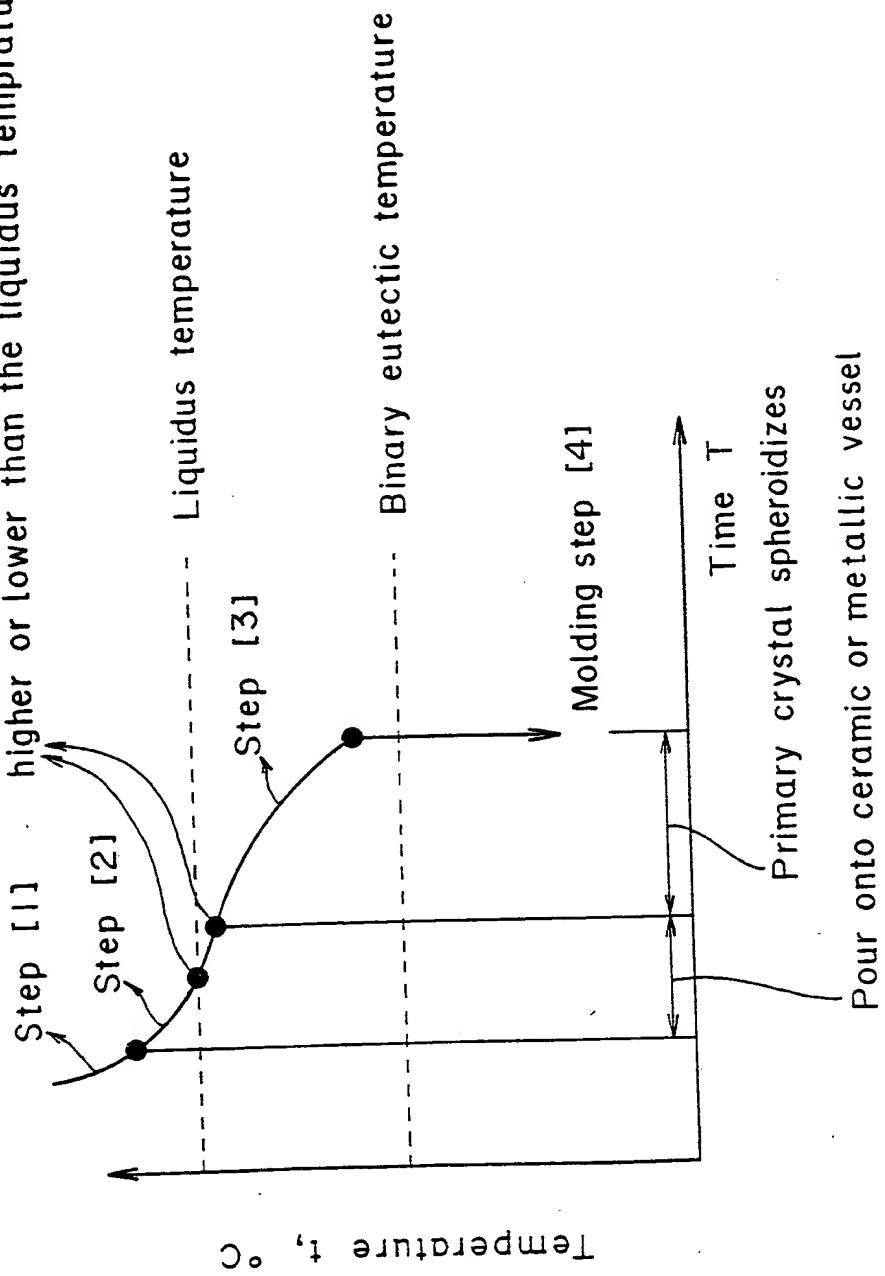


FIG. 2 (α)

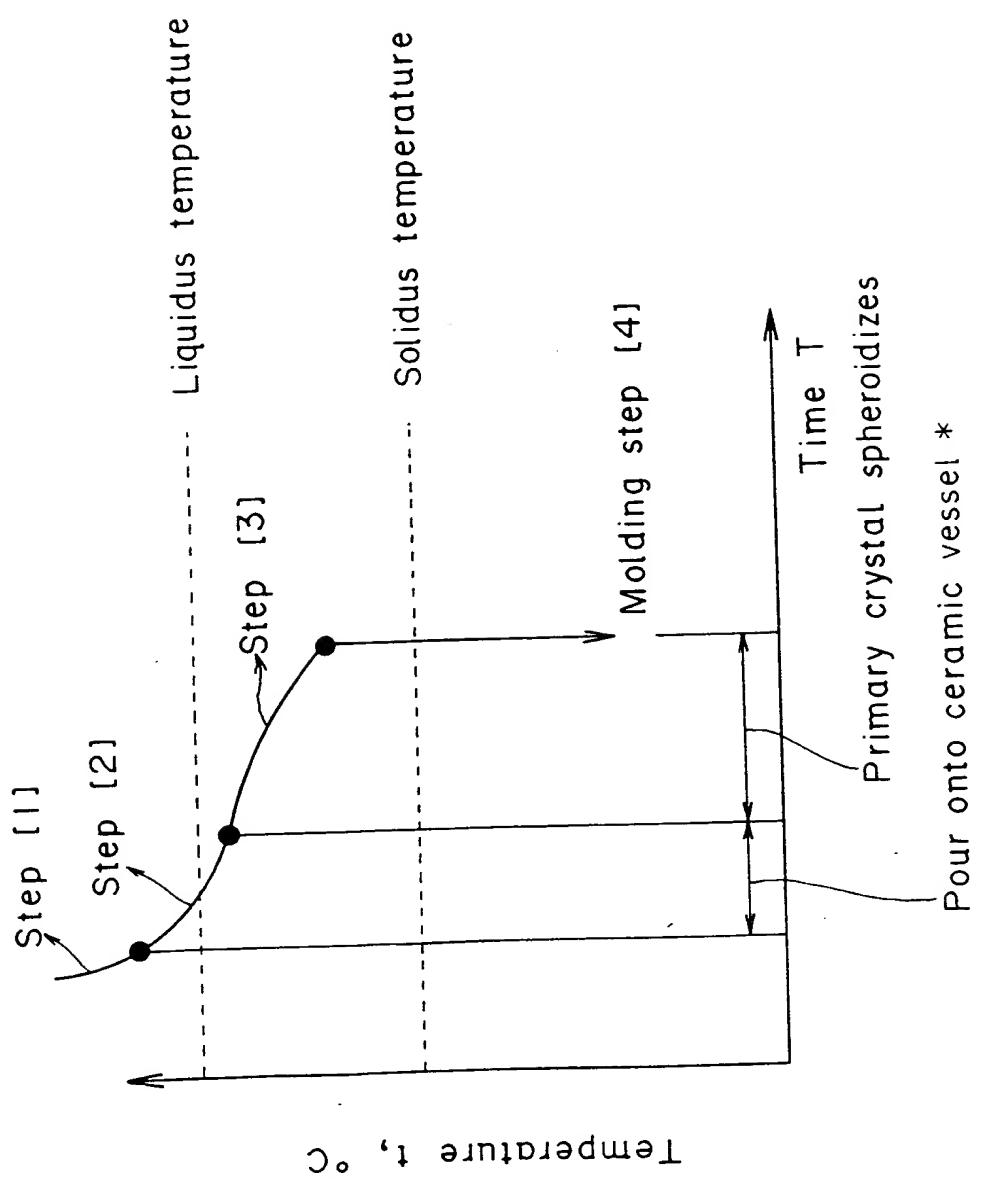


FIG. 2 (b)

Temperature of melt depends on the case and may be higher or lower than the liquidus temperature

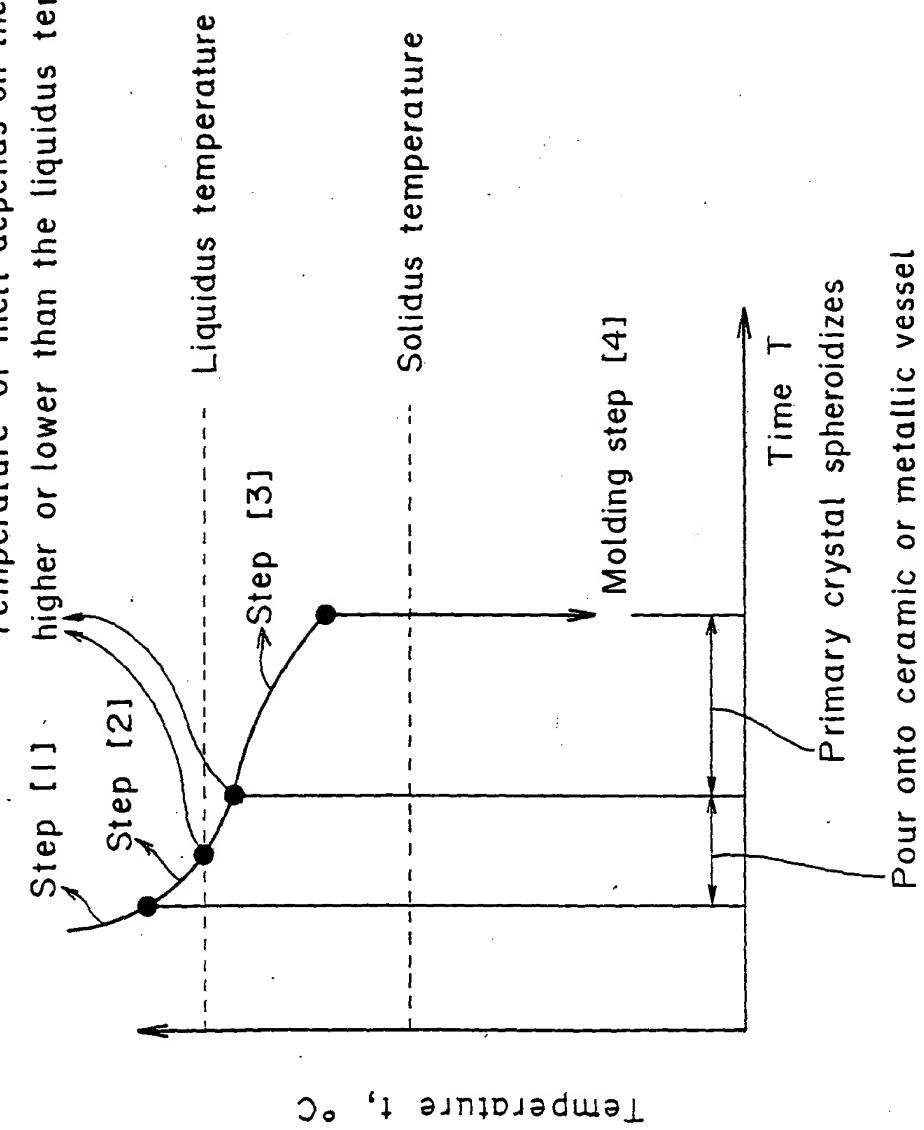


FIG. 3 (a)

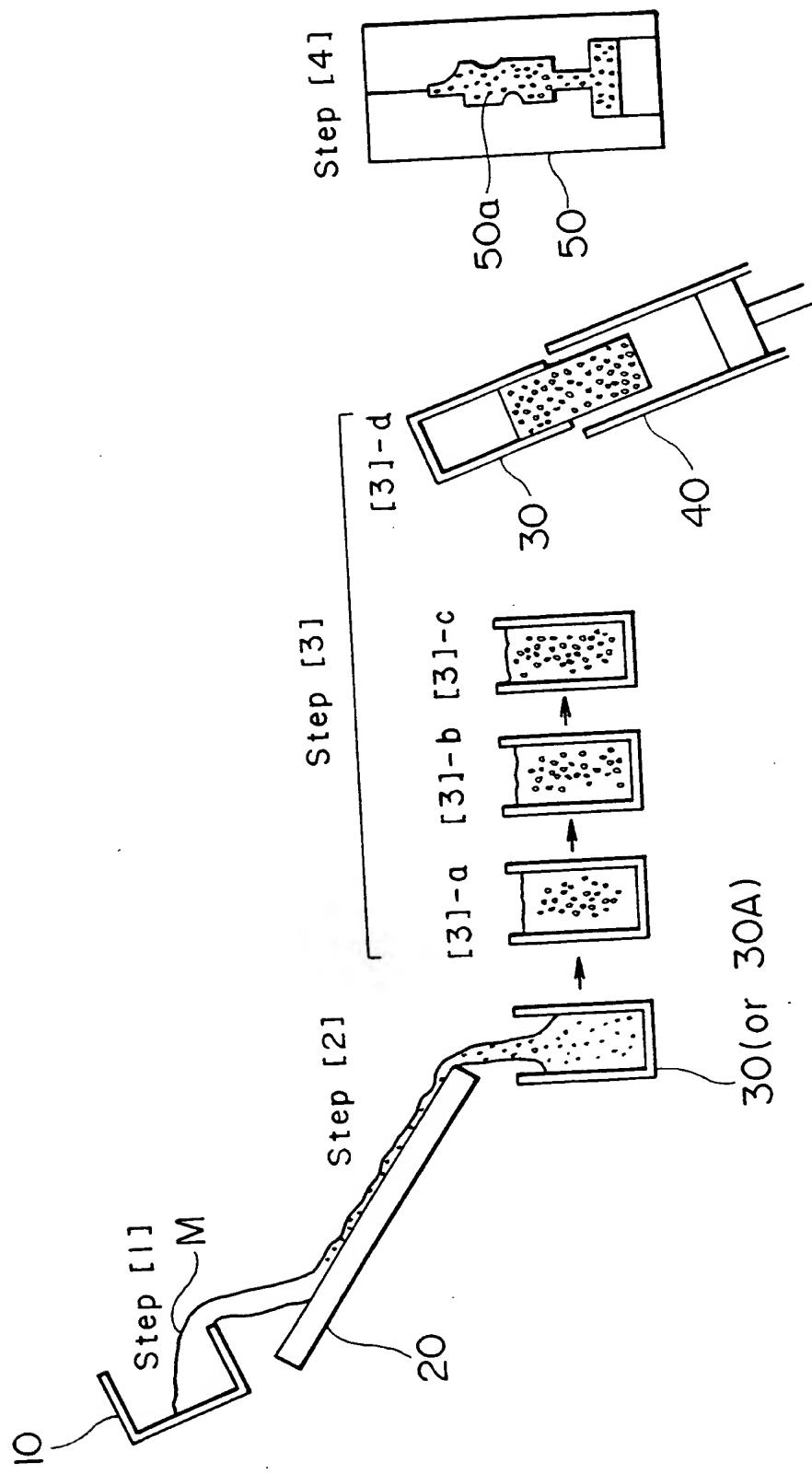
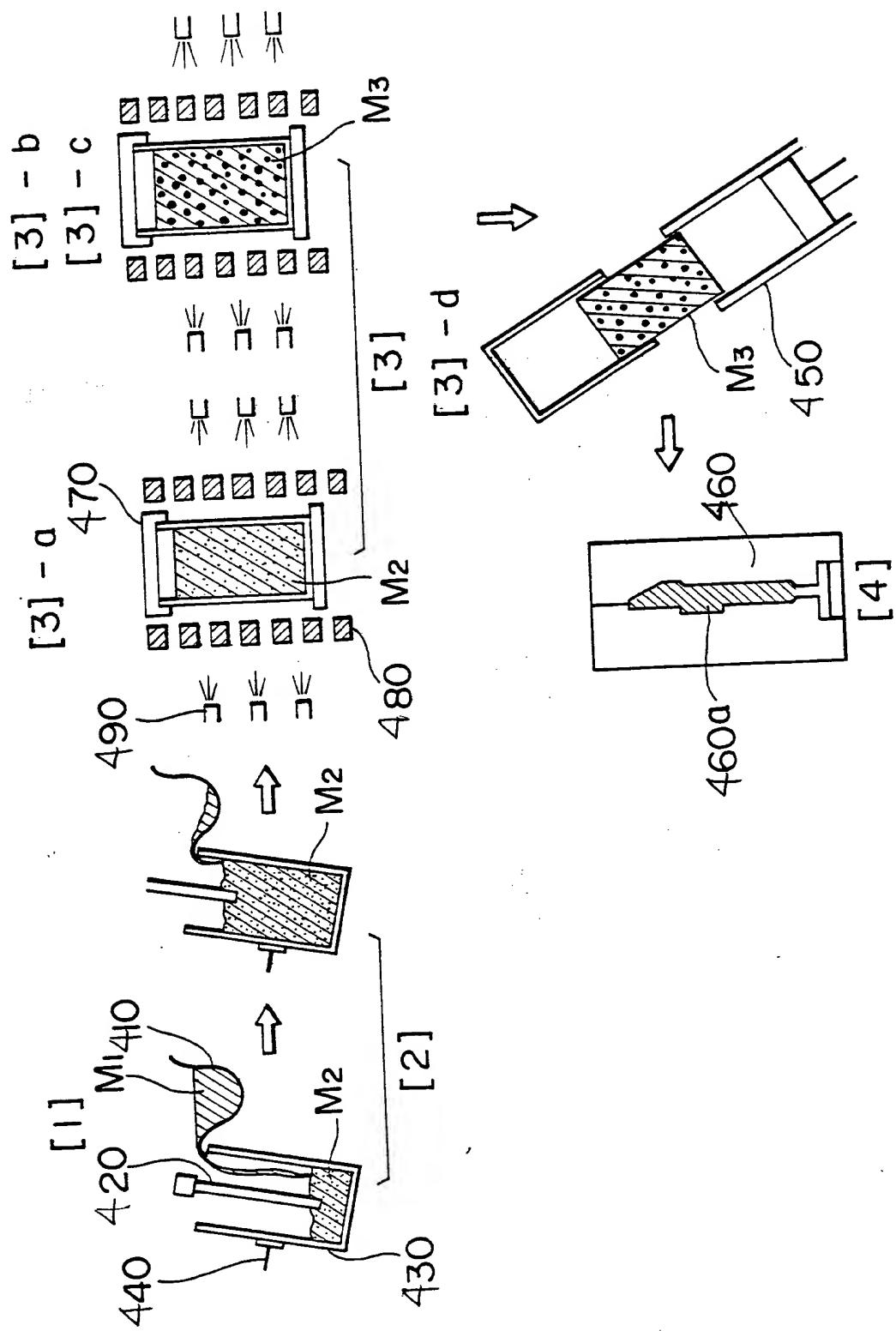


FIG. 3(b)



APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
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FIG. 4

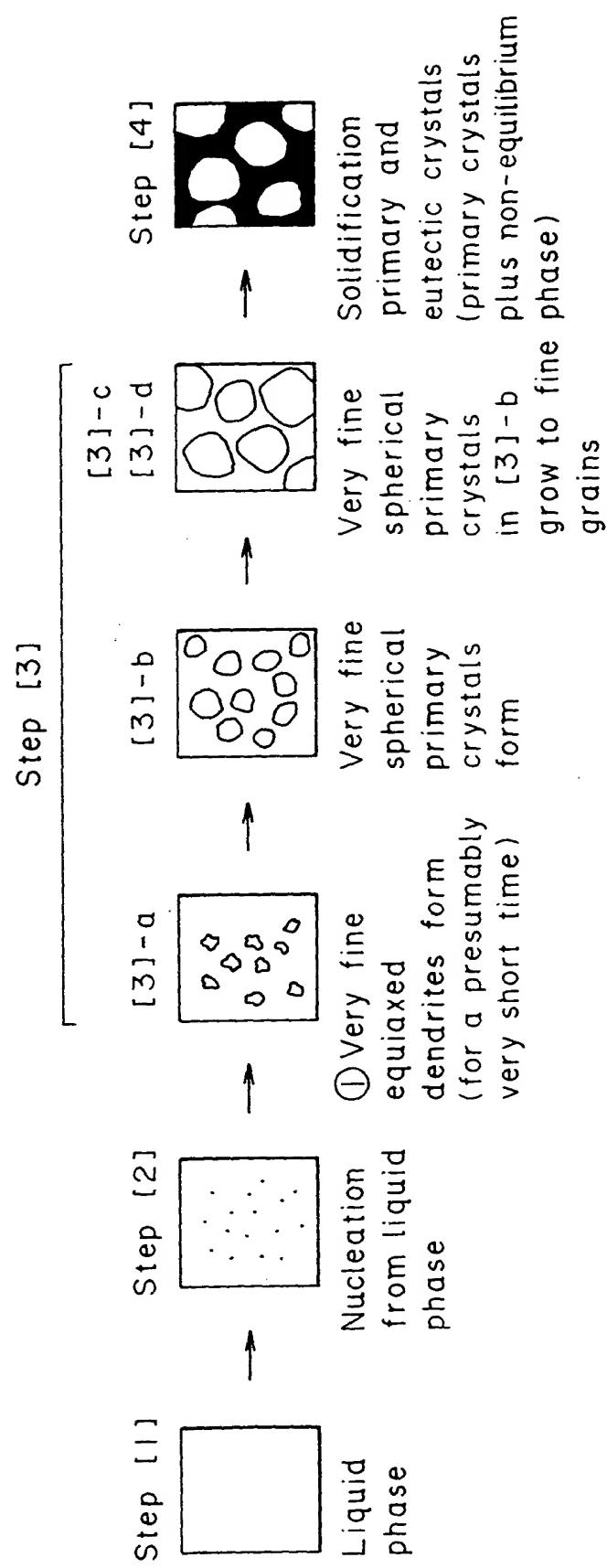


FIG. 5(a)

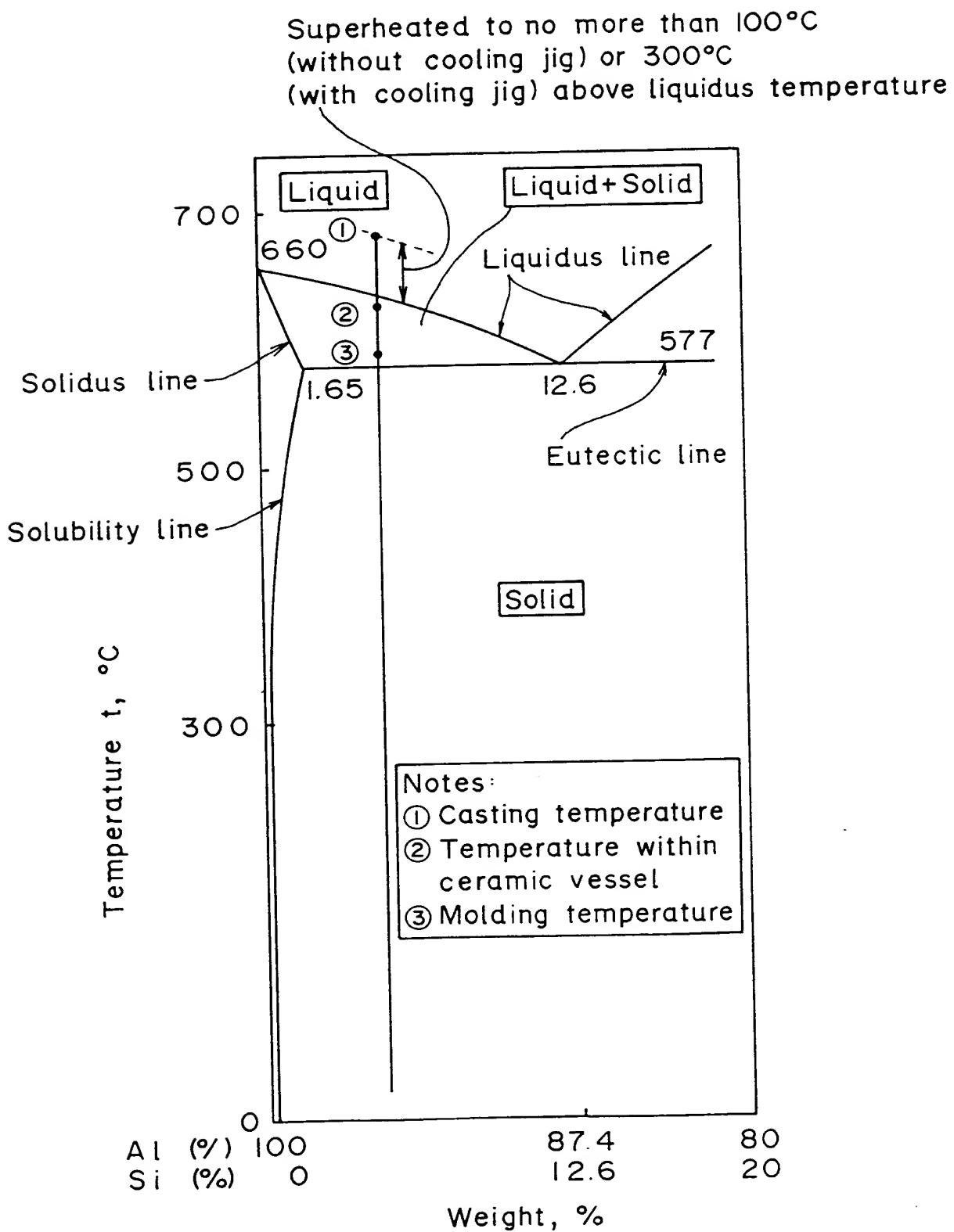


FIG. 5(b)

Temperature of melt depends on the case and may be higher or lower than the liquidus temperature

Superheated to no more than 50°C above liquidus temperature

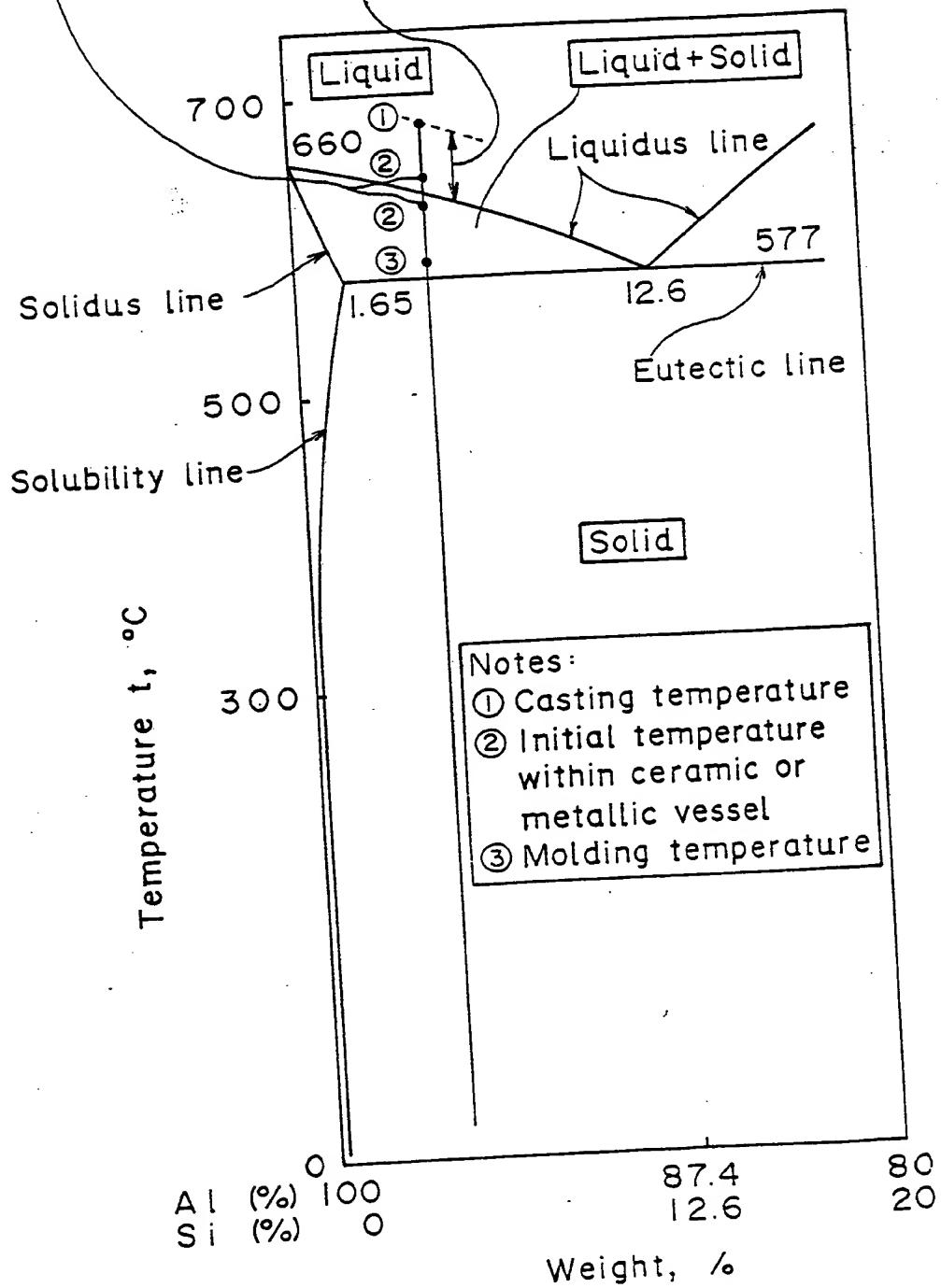


FIG. 6(a)

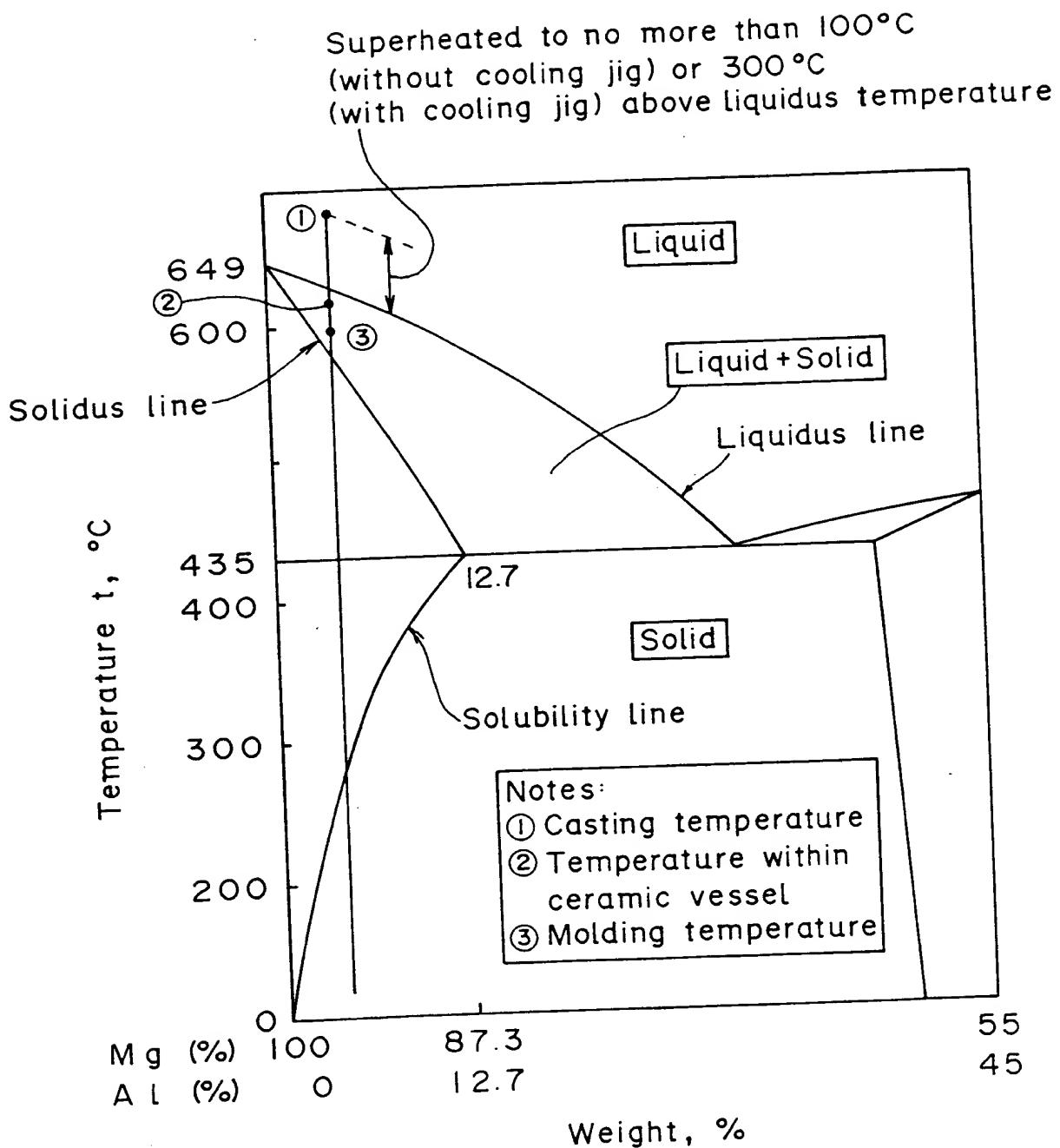


FIG. 6(b)

Temperature of melt depends on the case and may be higher or lower than the liquidus temperature

Superheated to no more than 50°C above liquidus temperature

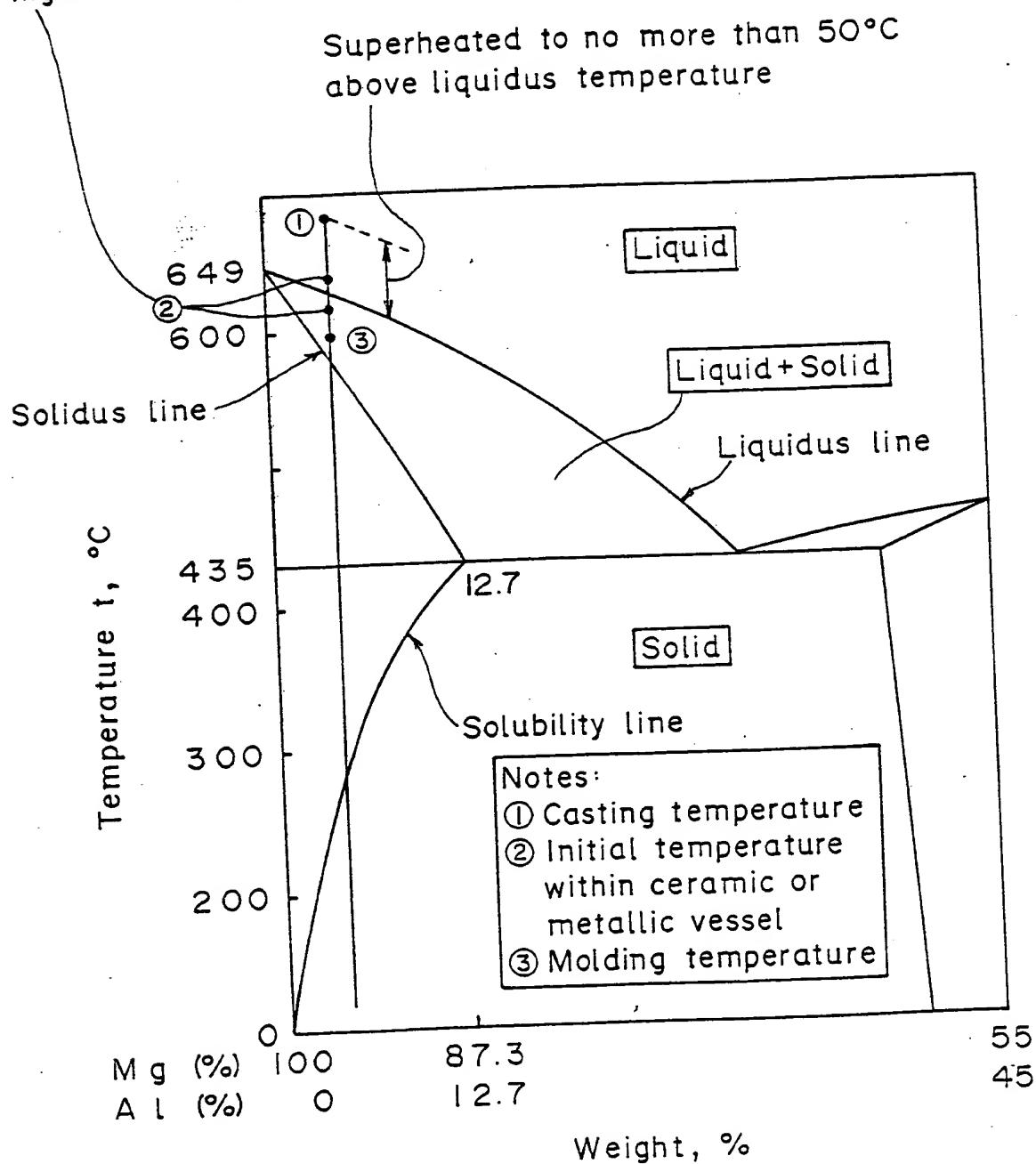


FIG. 7(a)

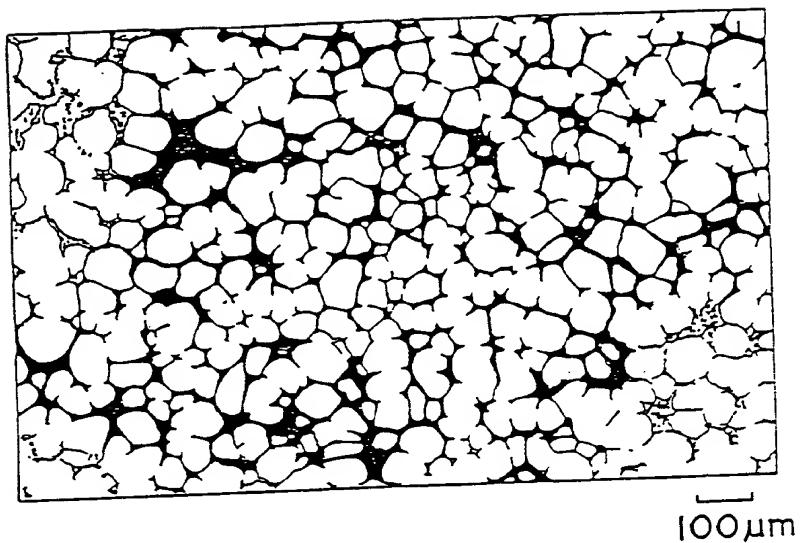
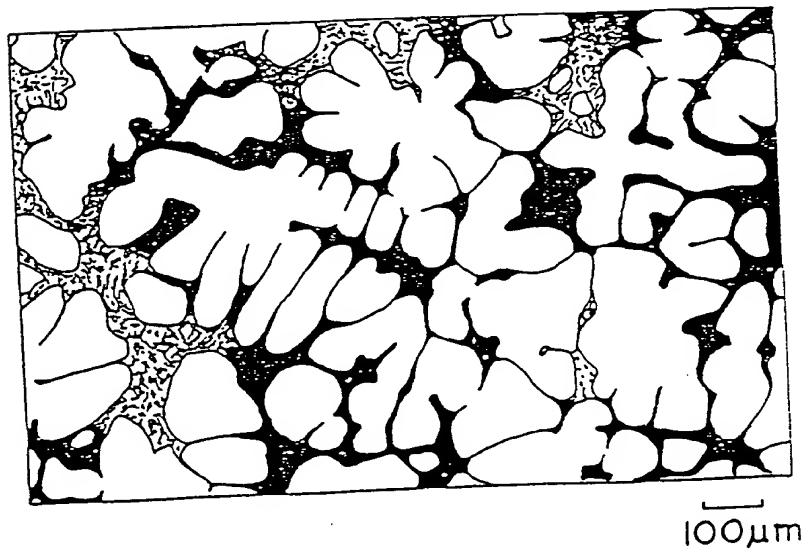


FIG. 8(a) Prior Art



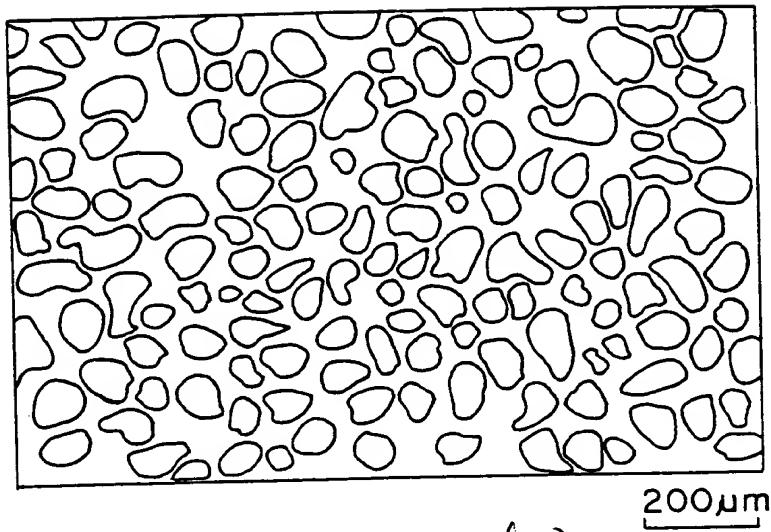


FIG. 7(b)



FIG. 8(b)
PRIOR ART

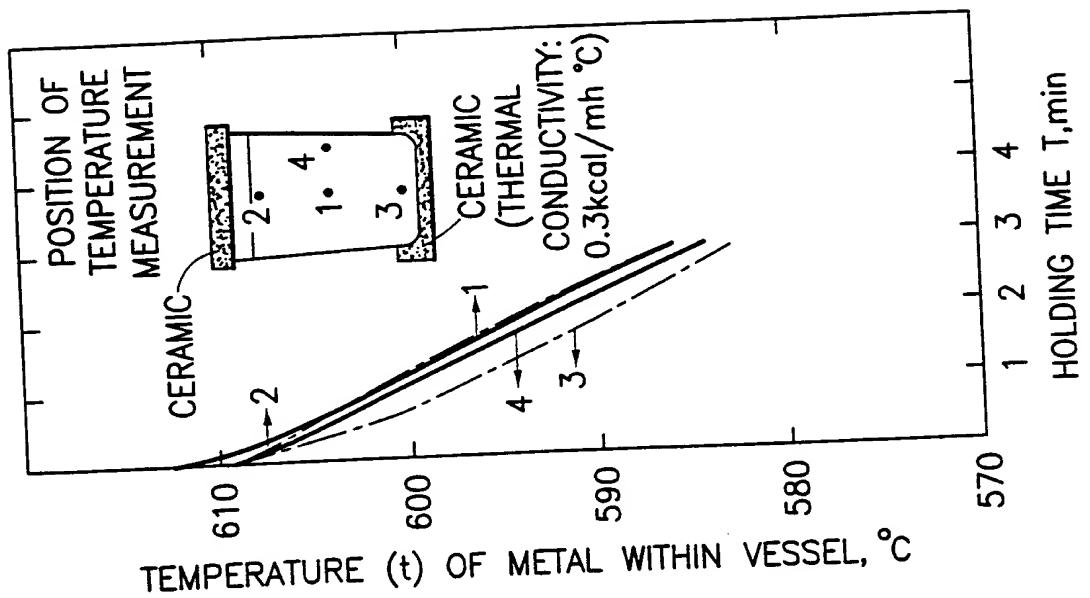


FIG. 75(b)

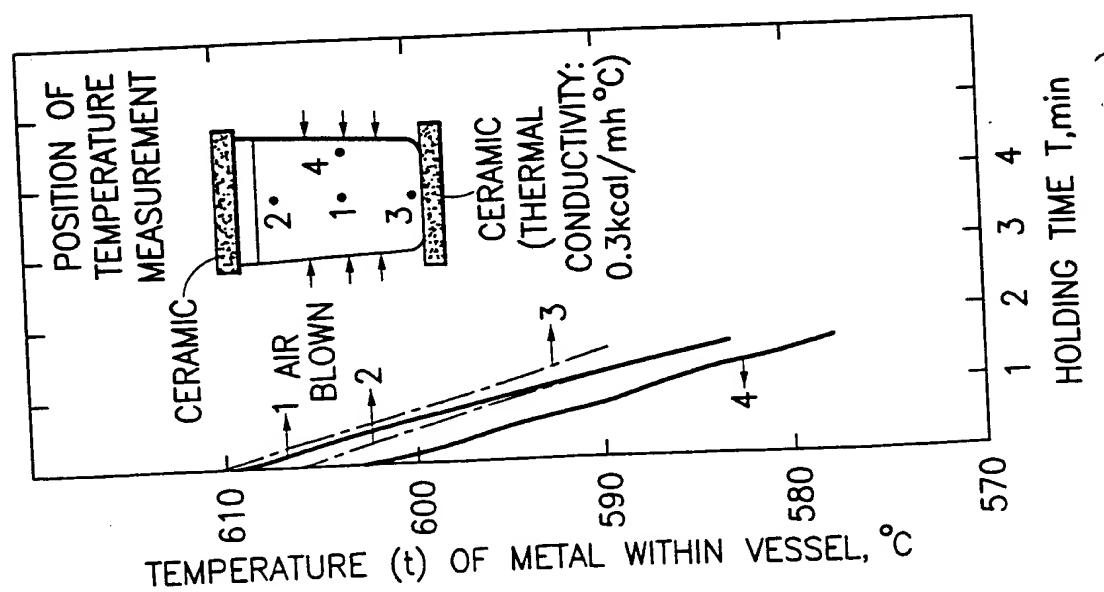
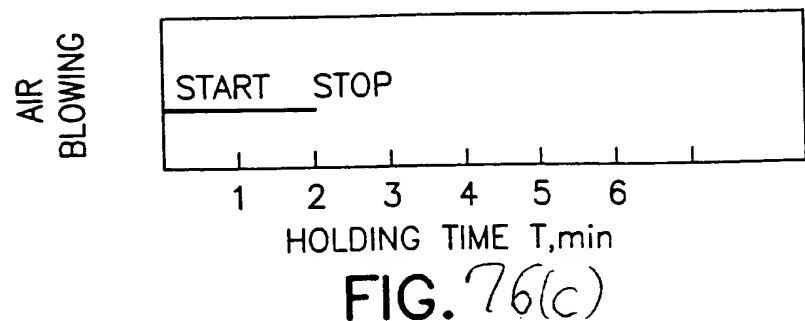
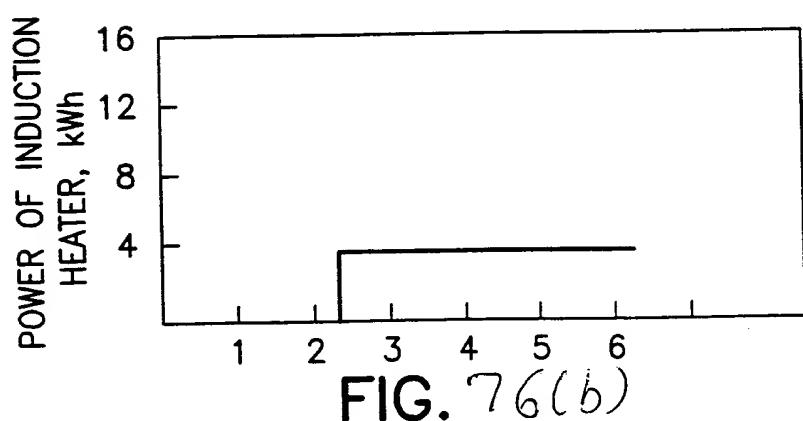
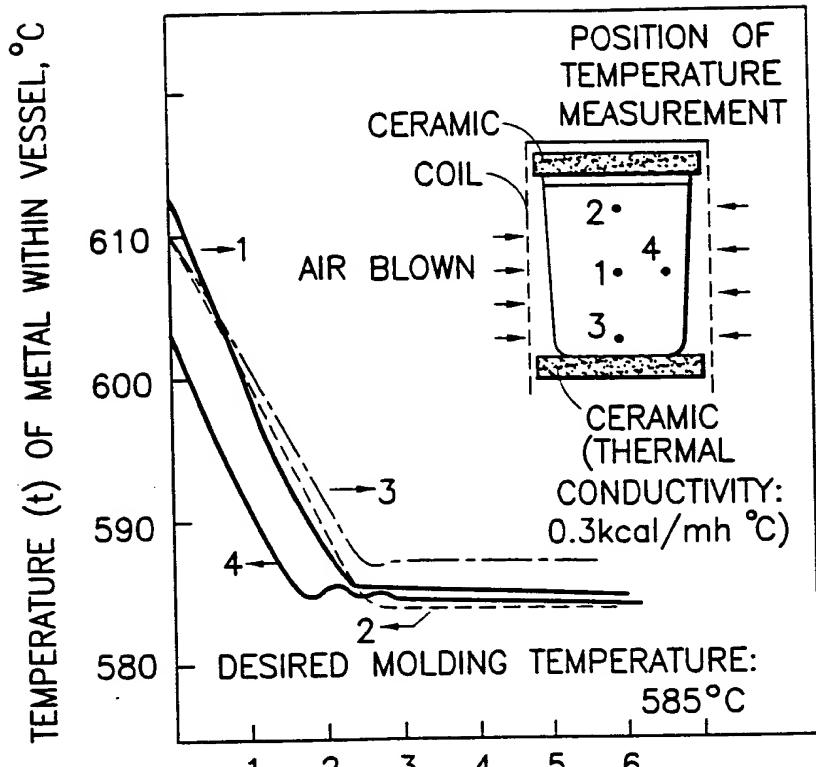
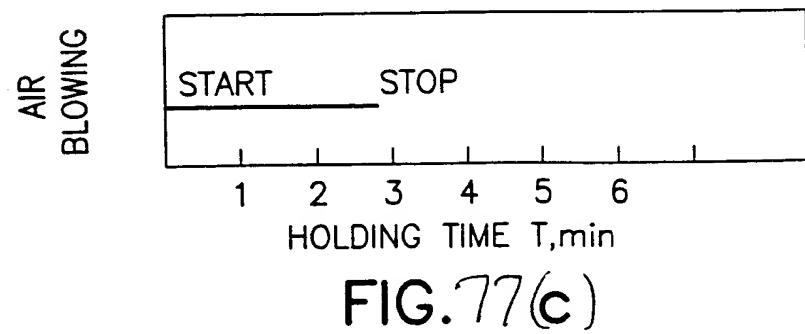
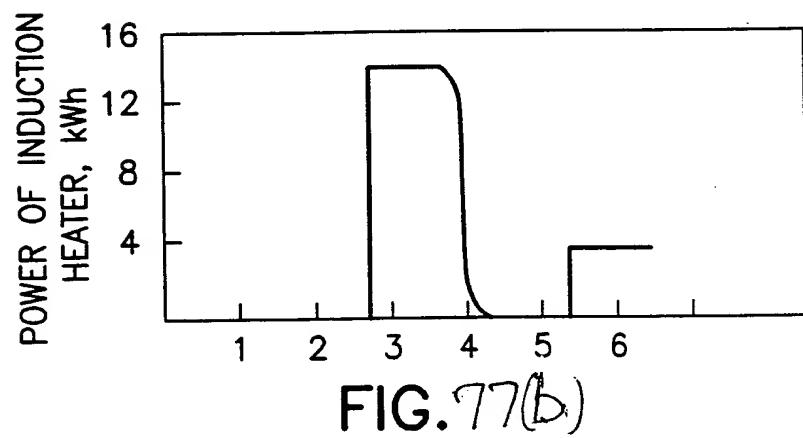
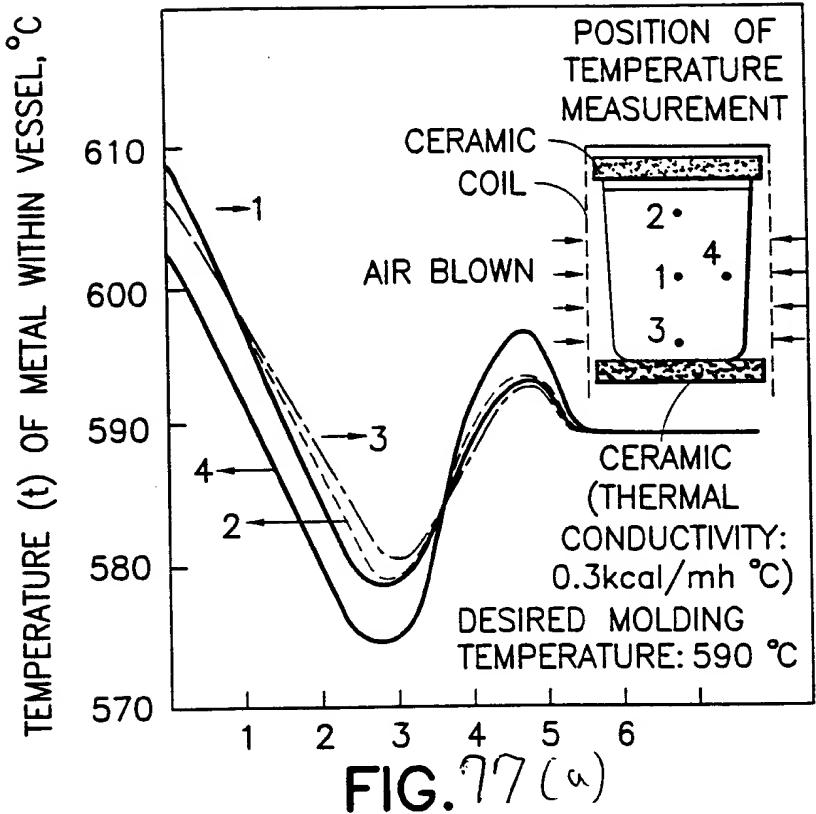
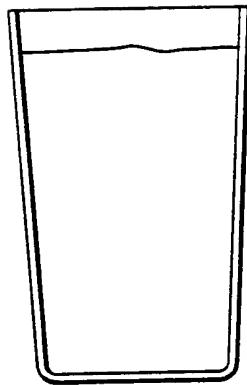


FIG. 75(c)

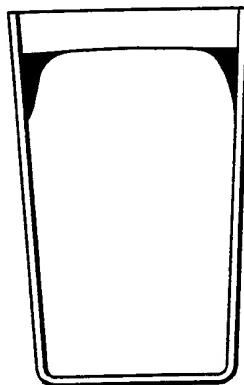






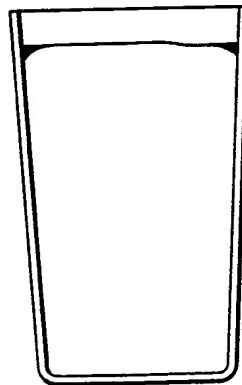
WHEN MOLDING TEMPERATURE IS REACHED

FIG. 78(a)



WHEN HEATED AND HELD WITH rf INDUCTION
HEATER (AT 8 kHz) FOR 20 min AFTER
MOLDING TEMPERATURE WAS REACHED

FIG. 78(b)



WHEN HEATED AND HELD WITH rf INDUCTION
HEATER (AT 40 kHz) FOR 20 min AFTER
MOLDING TEMPERATURE WAS REACHED

FIG. 78(c)

FIG. 79

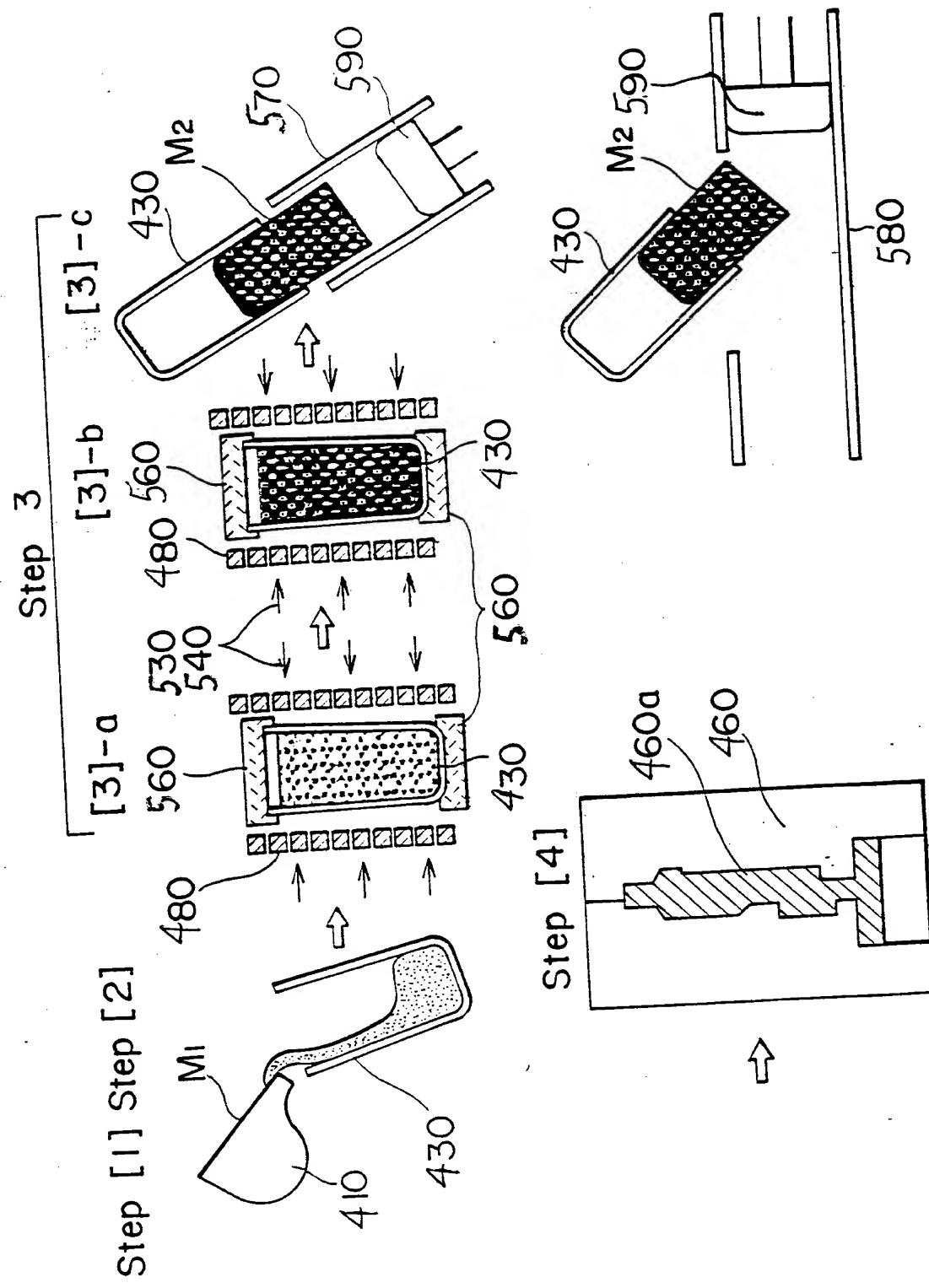


FIG. 80
AC4CH(Al-7Si-0.3Mg-0.15Ti)

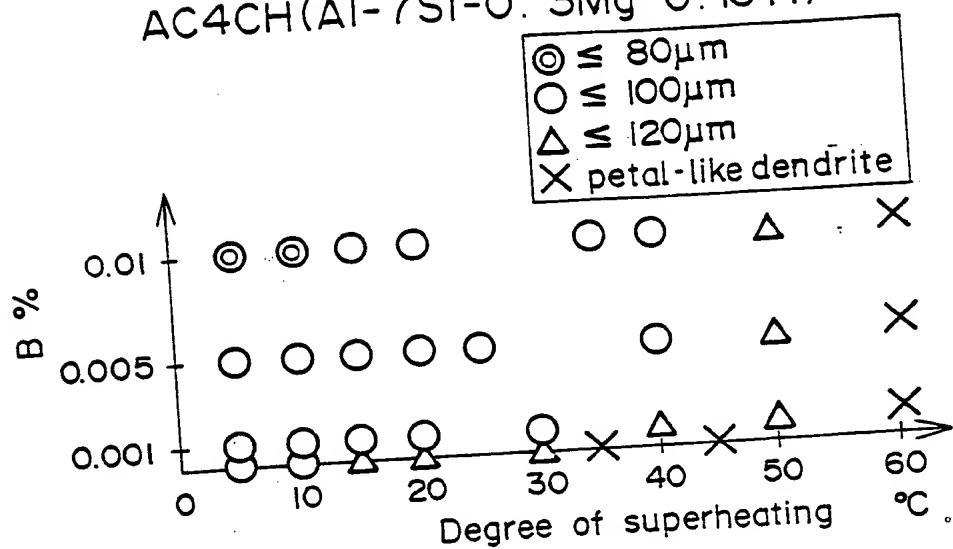


FIG. 81
7075(Al-5.5Zn-2.5Mg-1.6Cu-0.15Ti)

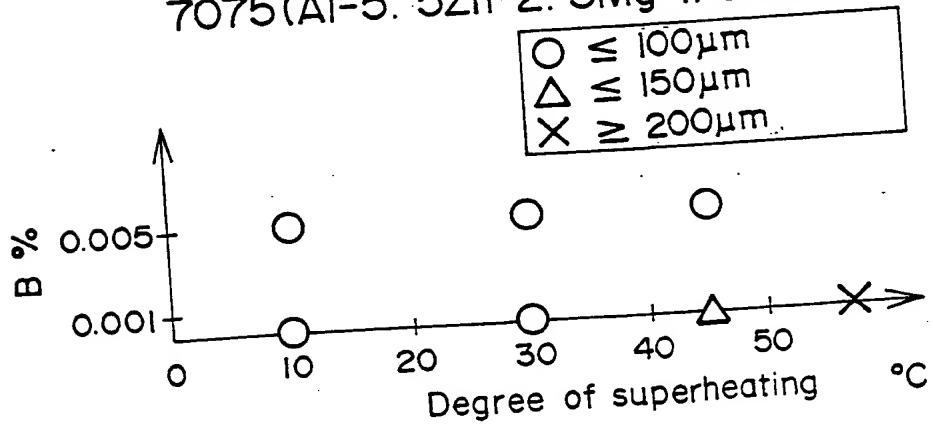


FIG. 82

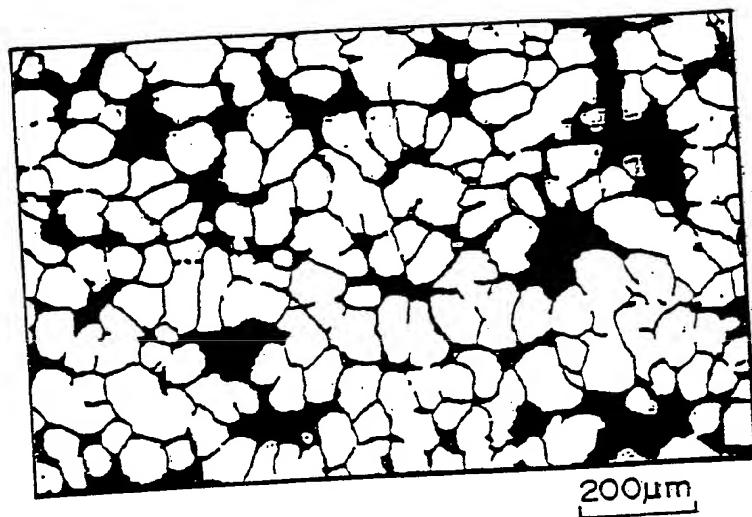


FIG. 83

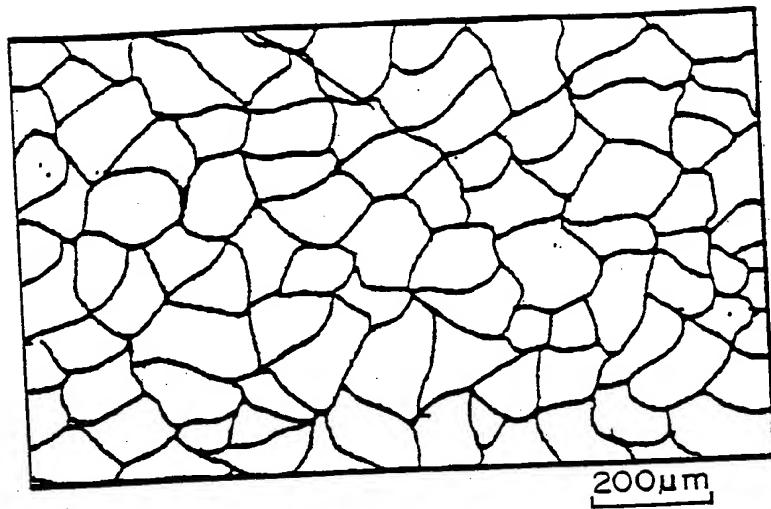


FIG. 84

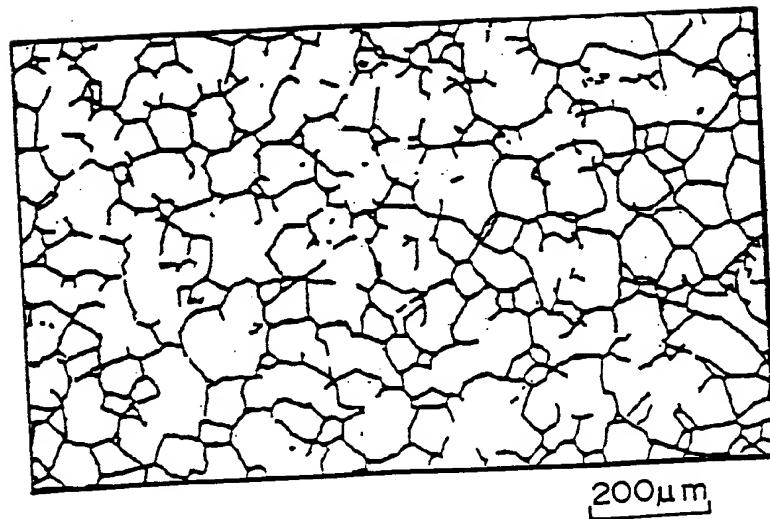
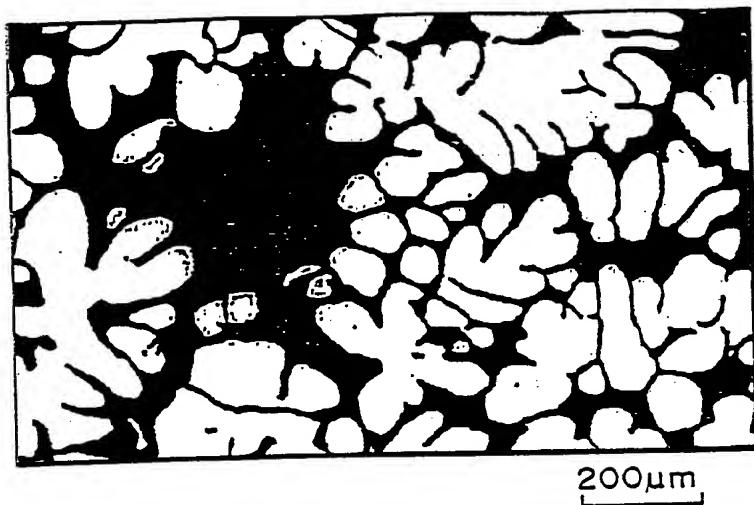
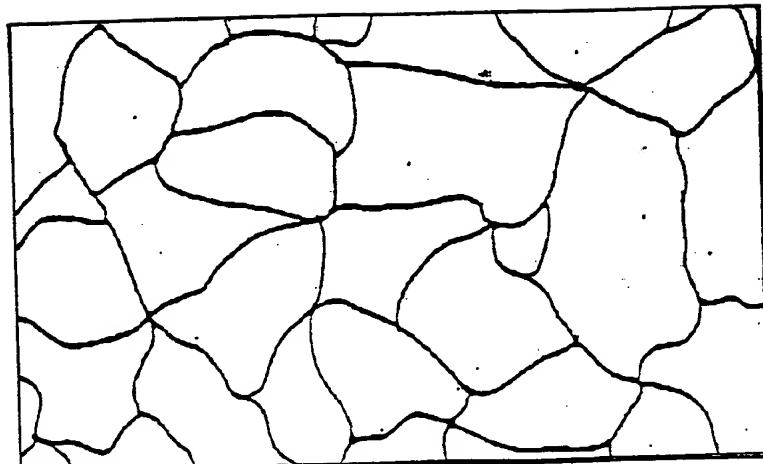


FIG. 85 Prior Art



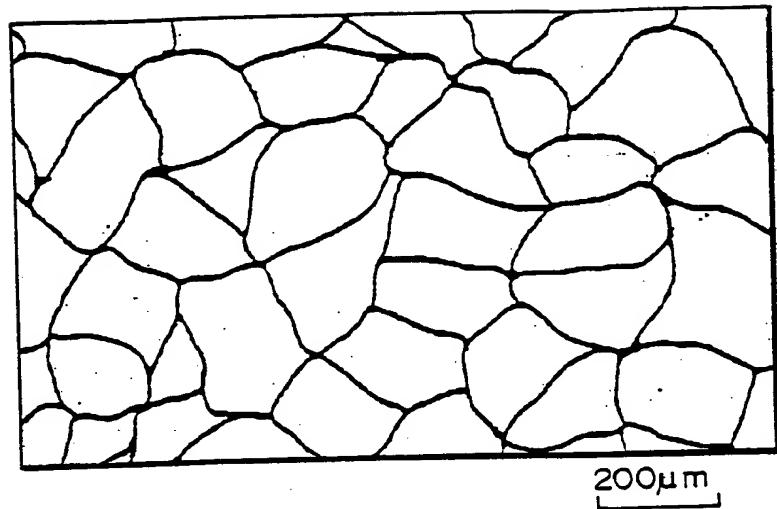
200 μ m

FIG. 86 Prior Art



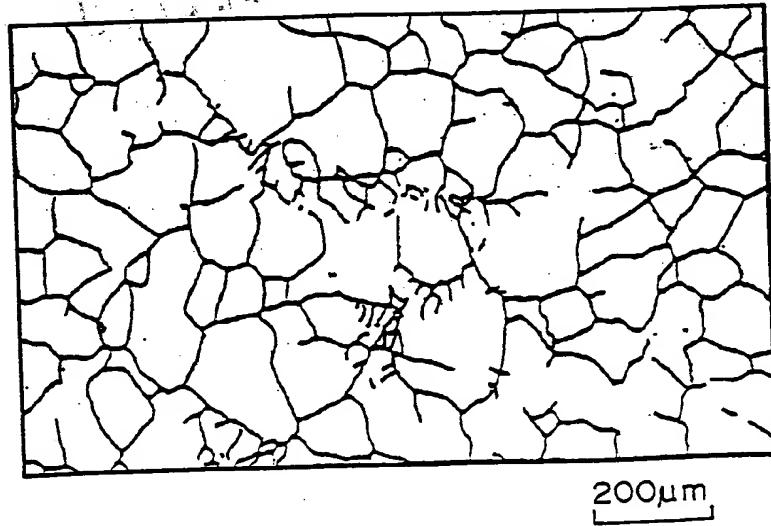
200 μ m

FIG. 87 Prior Art



200 μm scale bar in FIG. 87 is 200 μm scale bar in FIG. 88

FIG. 88 Prior Art



APPROVED	O. O. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

FIG. 9

Temperature of melt is, depending on cases,
higher or lower than the liquidus temperature

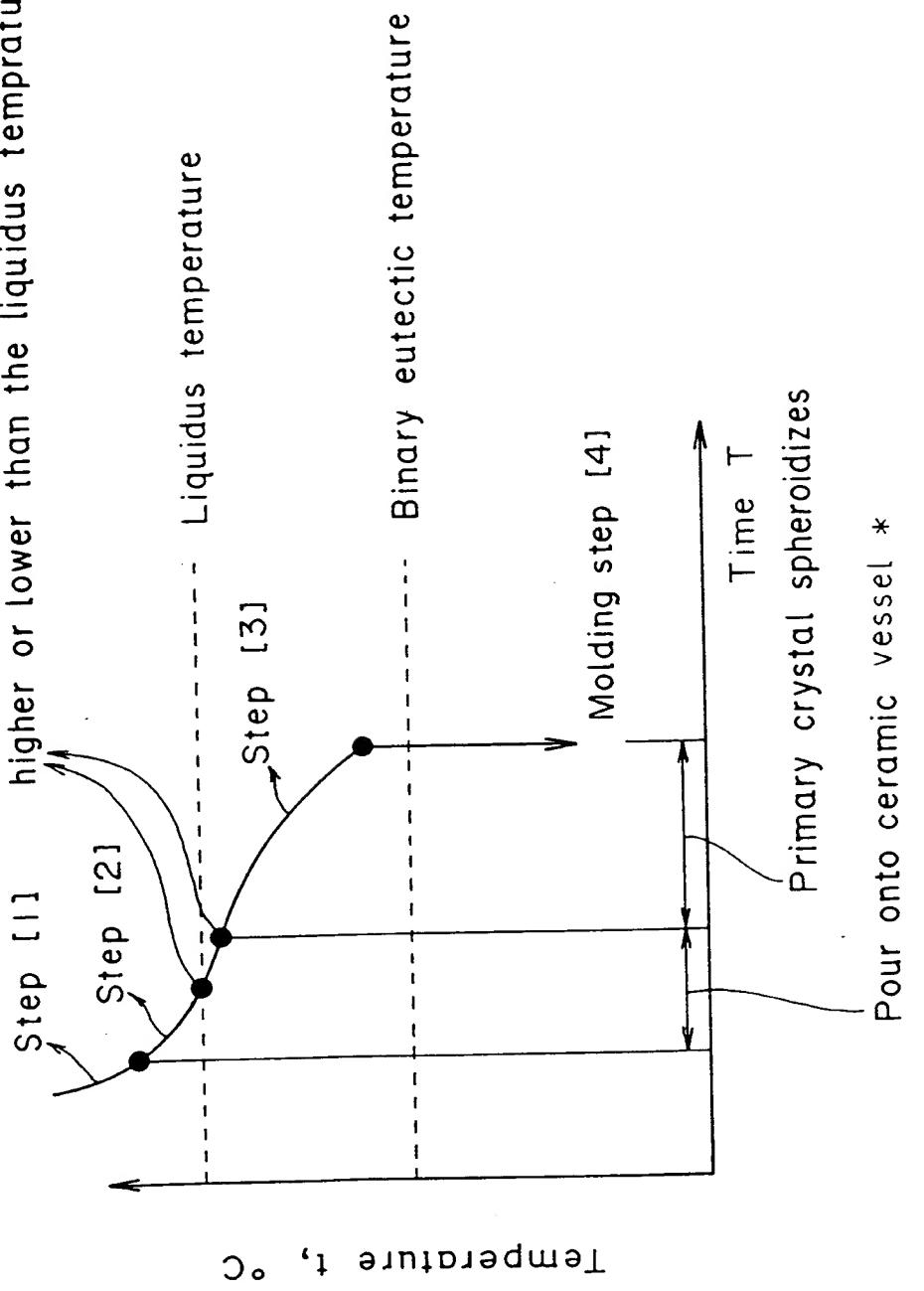


FIG. 10

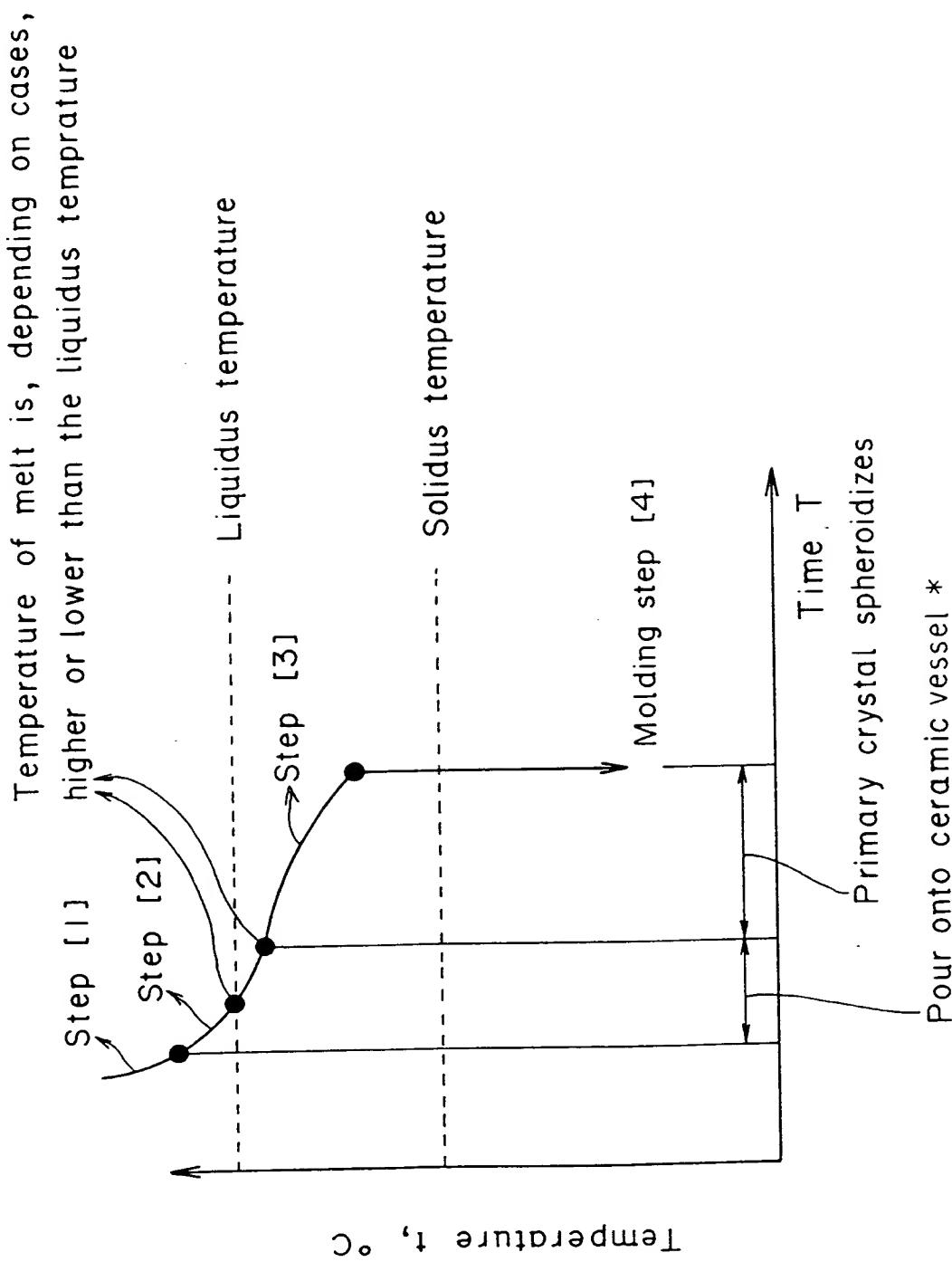


FIG. 11

Temperature of melt is, depending on cases,
higher or lower than the liquidus temperature

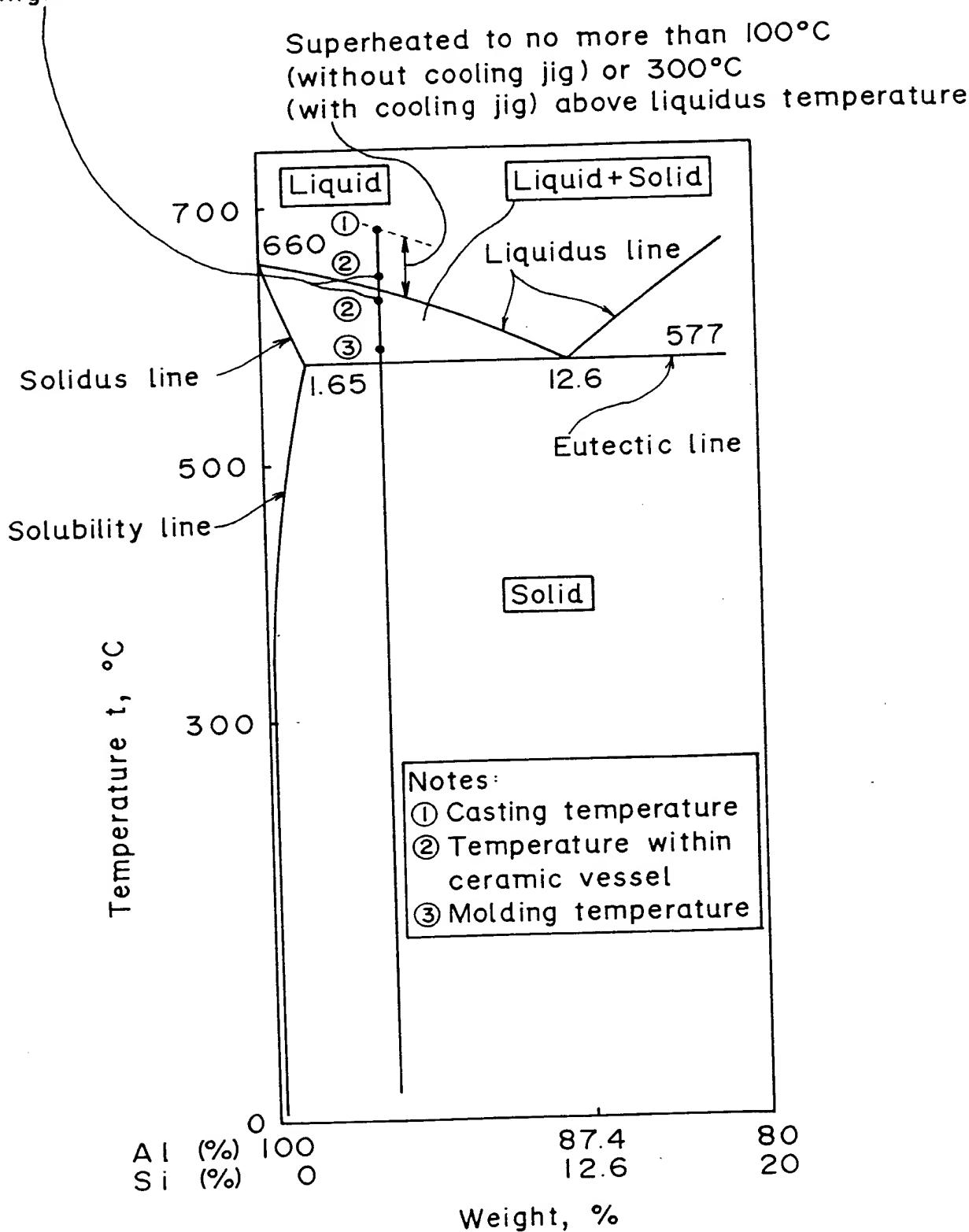


FIG. 12

Temperature of melt is, depending on cases,
higher or lower than the liquidus temperature

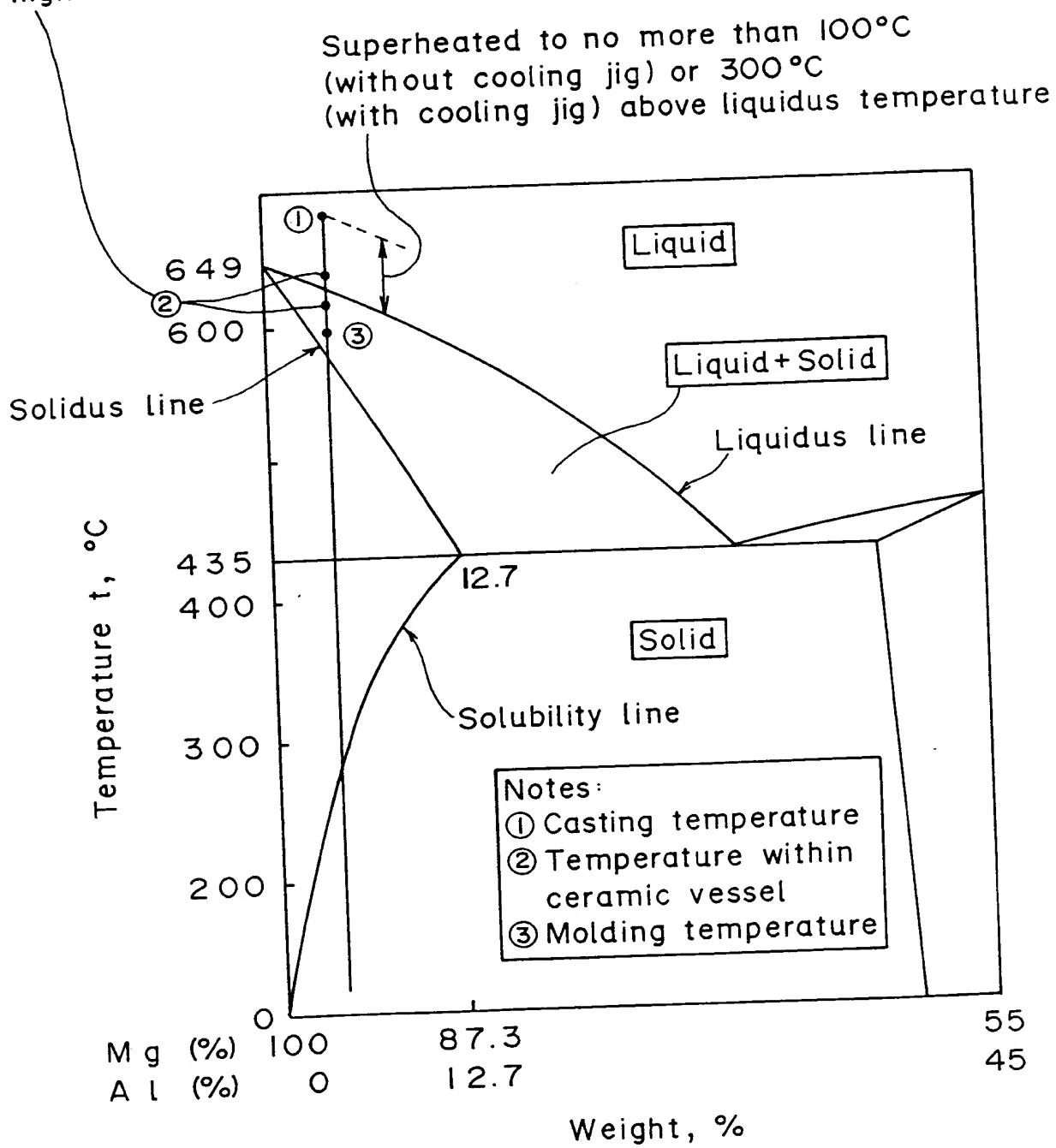


FIG. 13

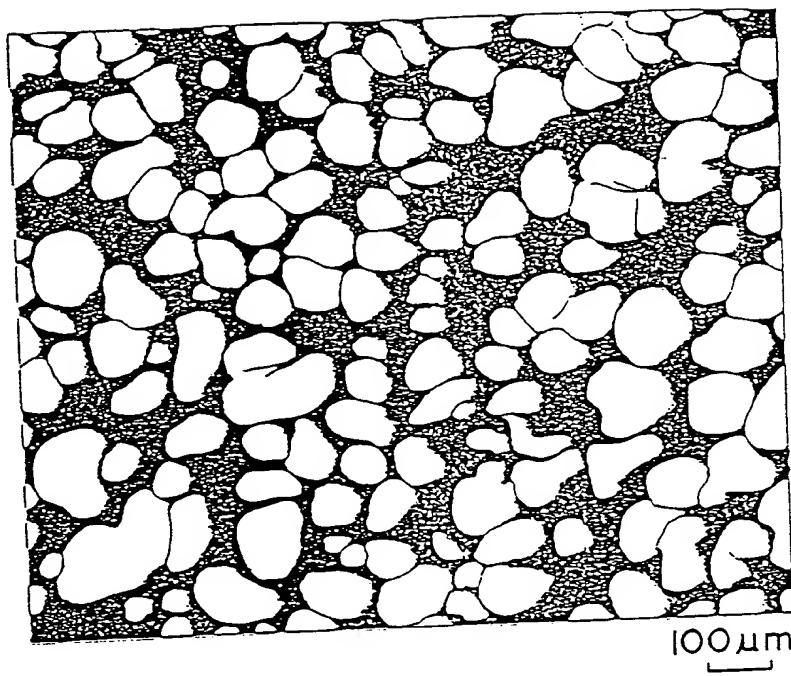


FIG. 14 Prior Art

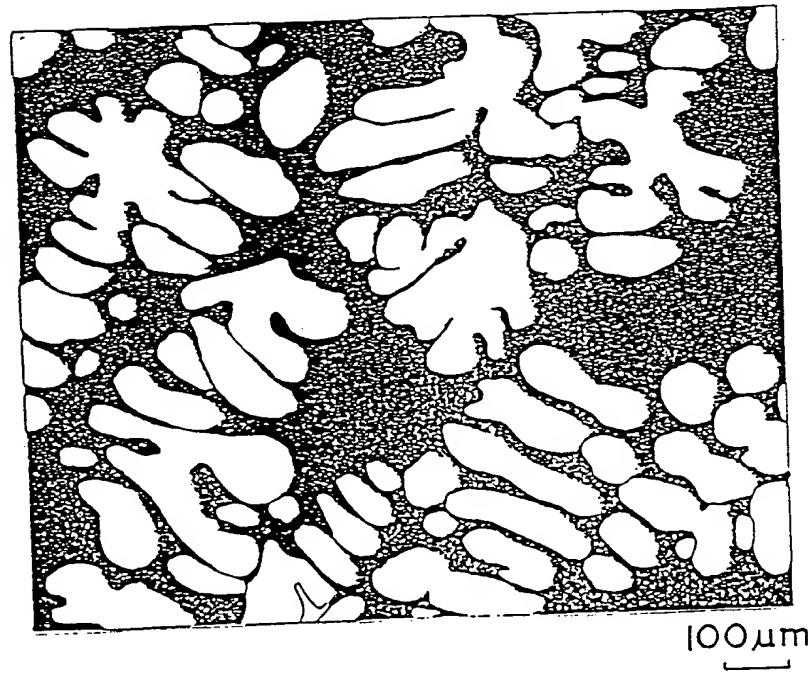


FIG. 15

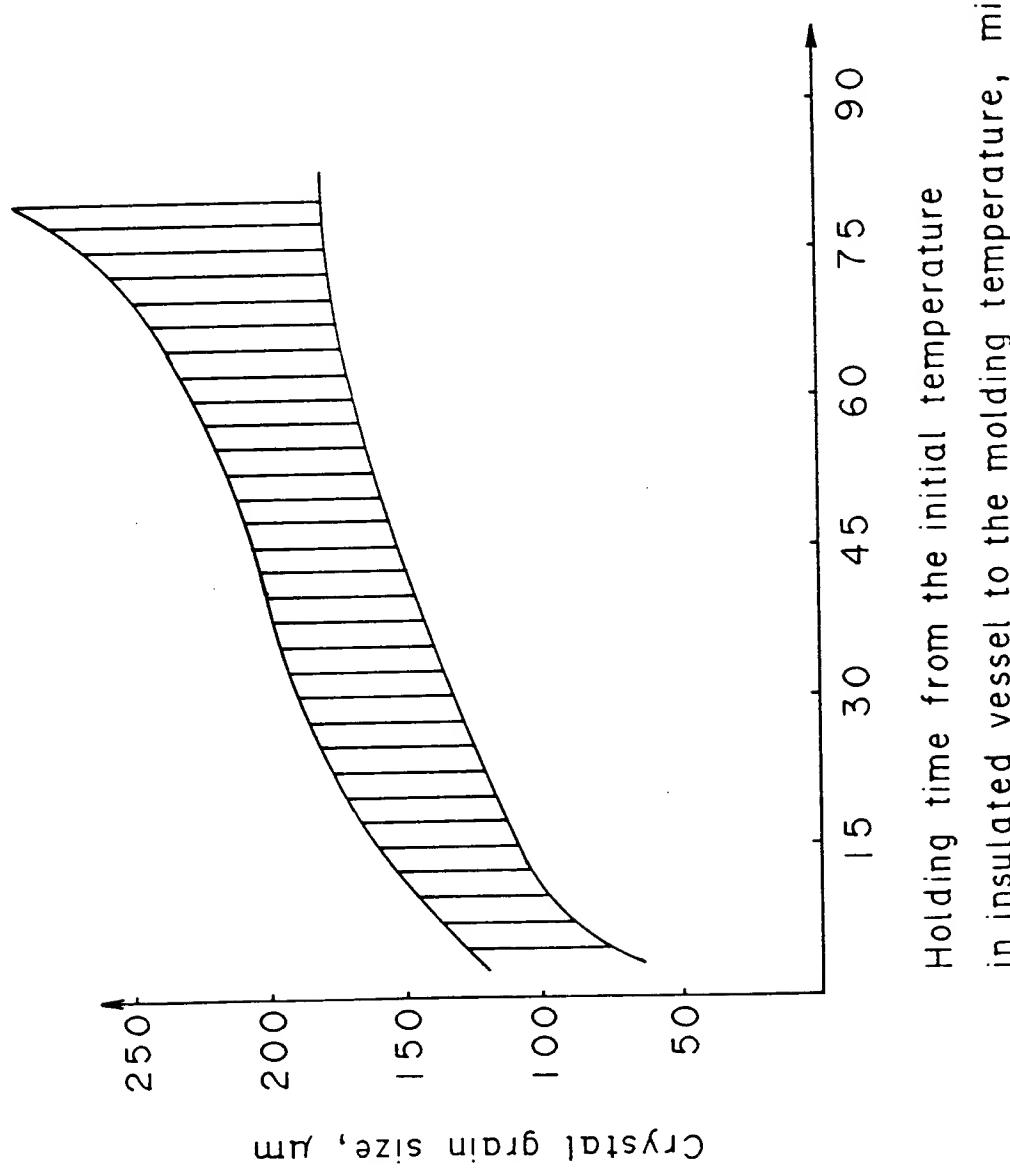


FIG. 16

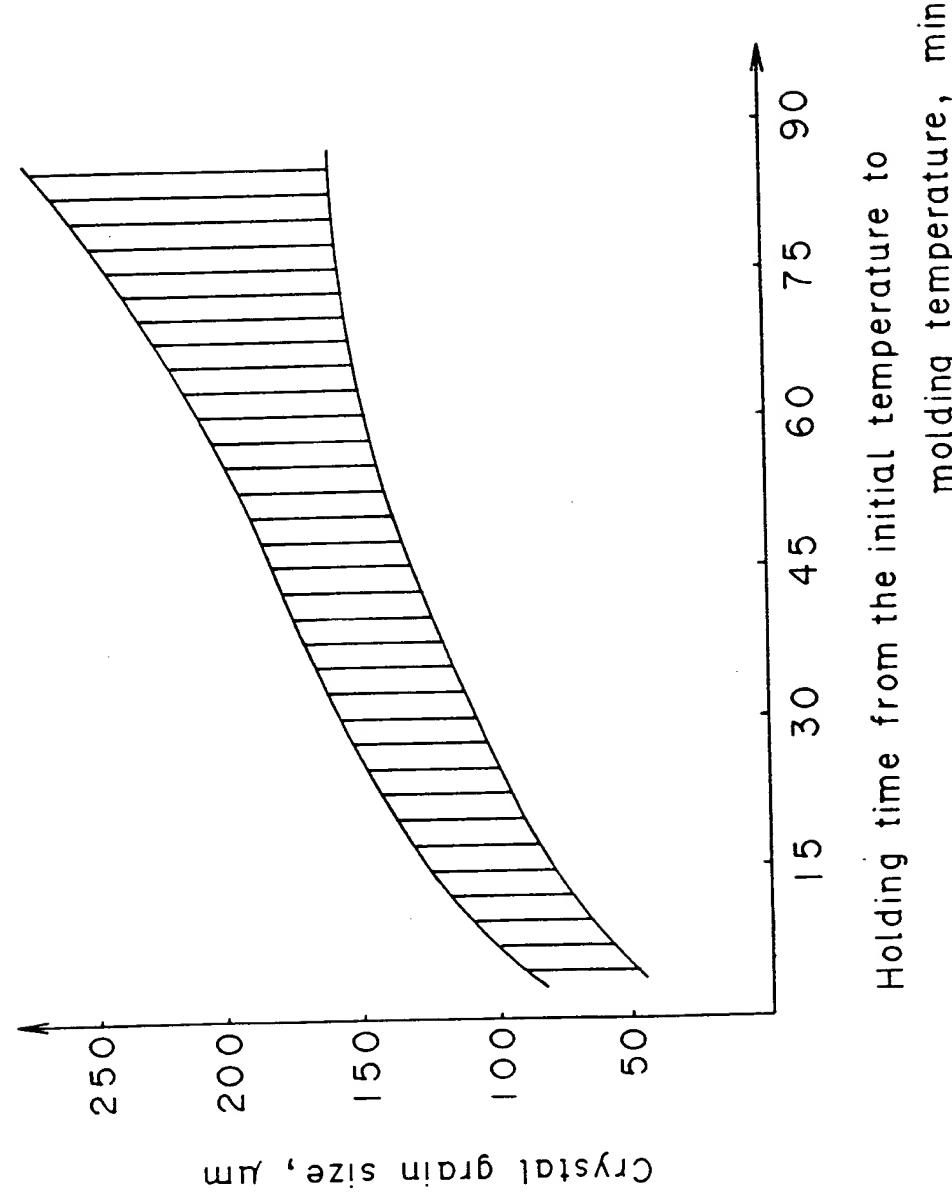


FIG. 17

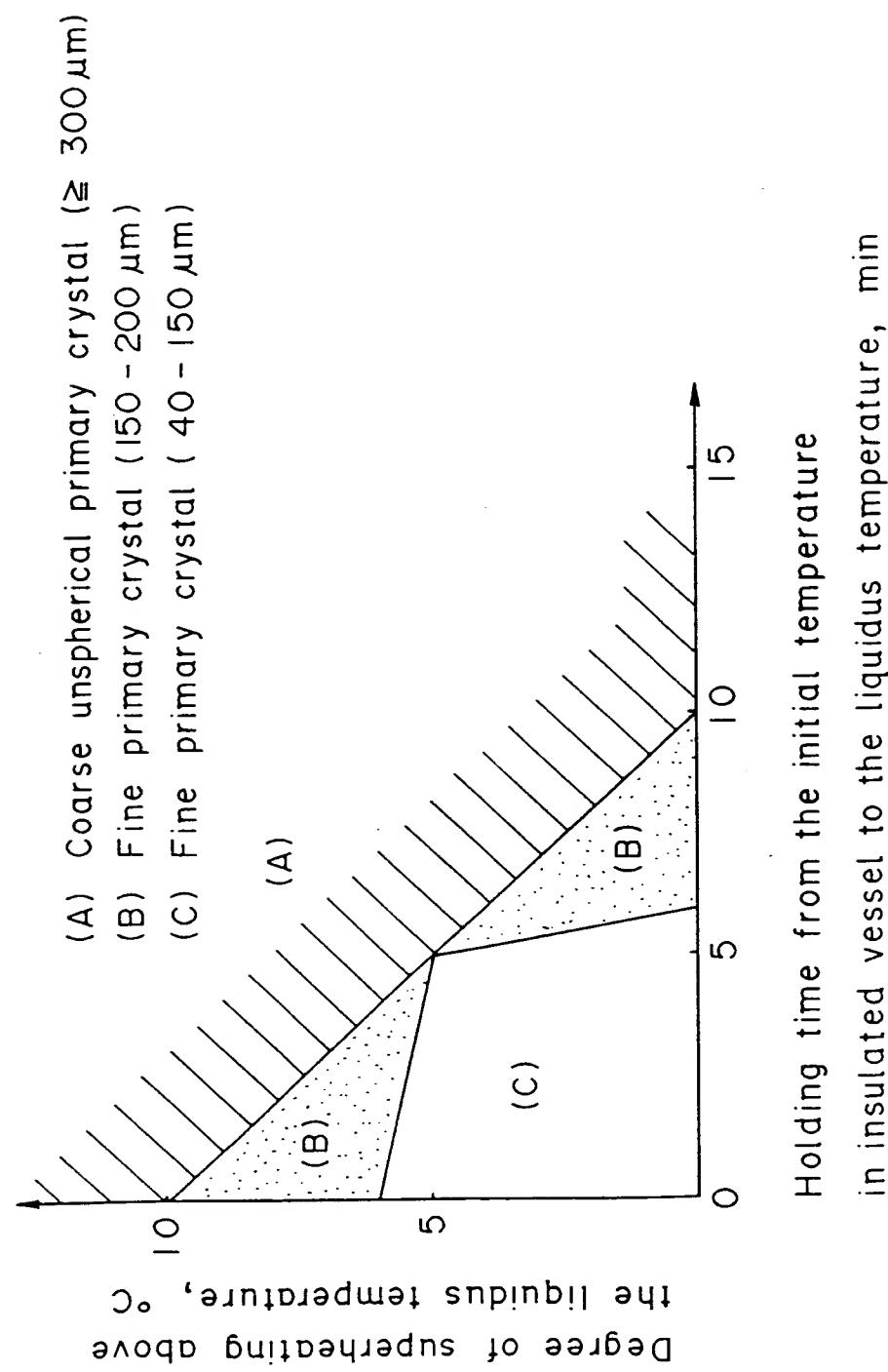
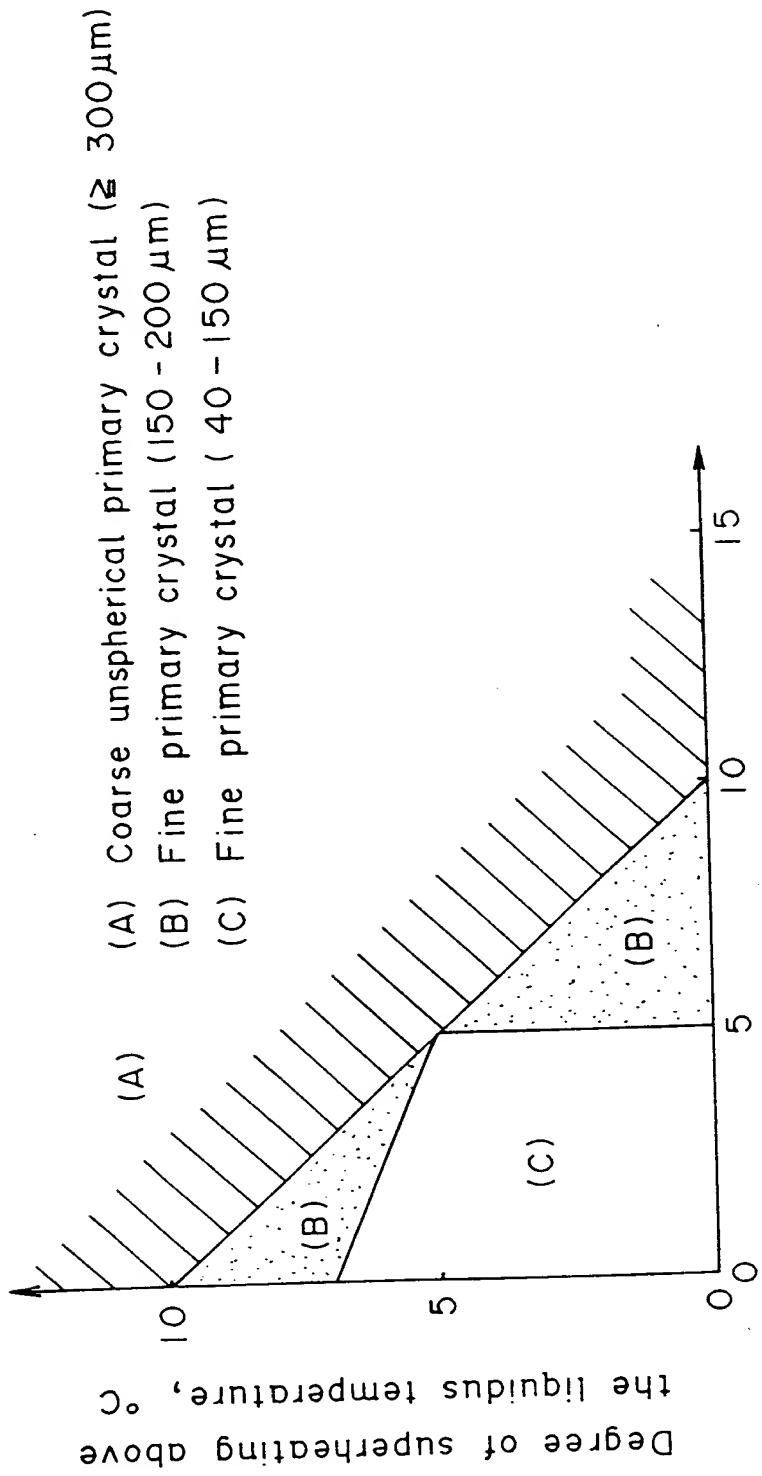
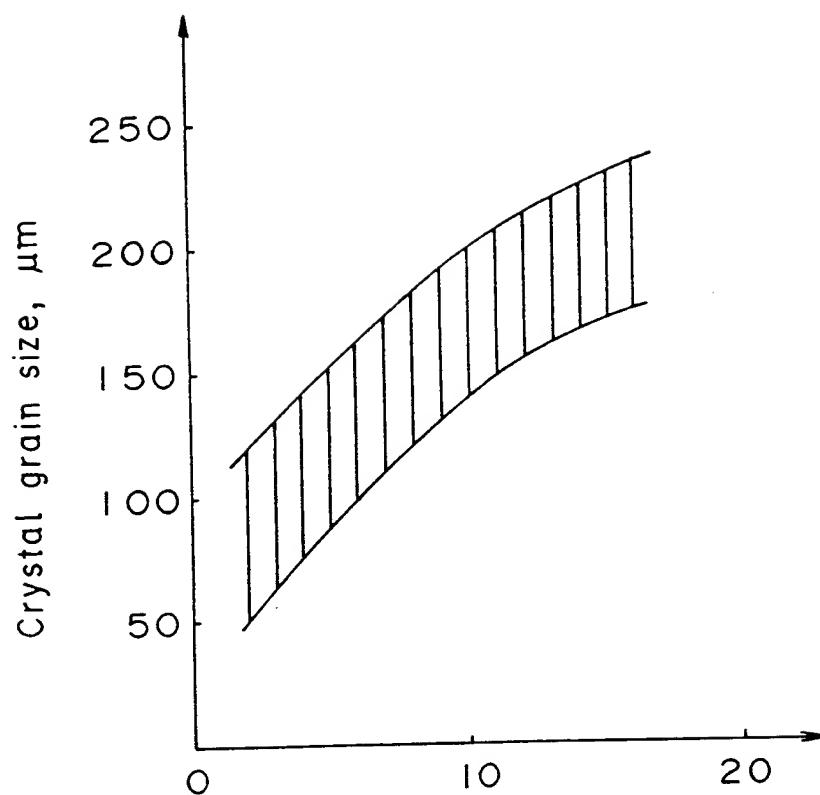


FIG. 18



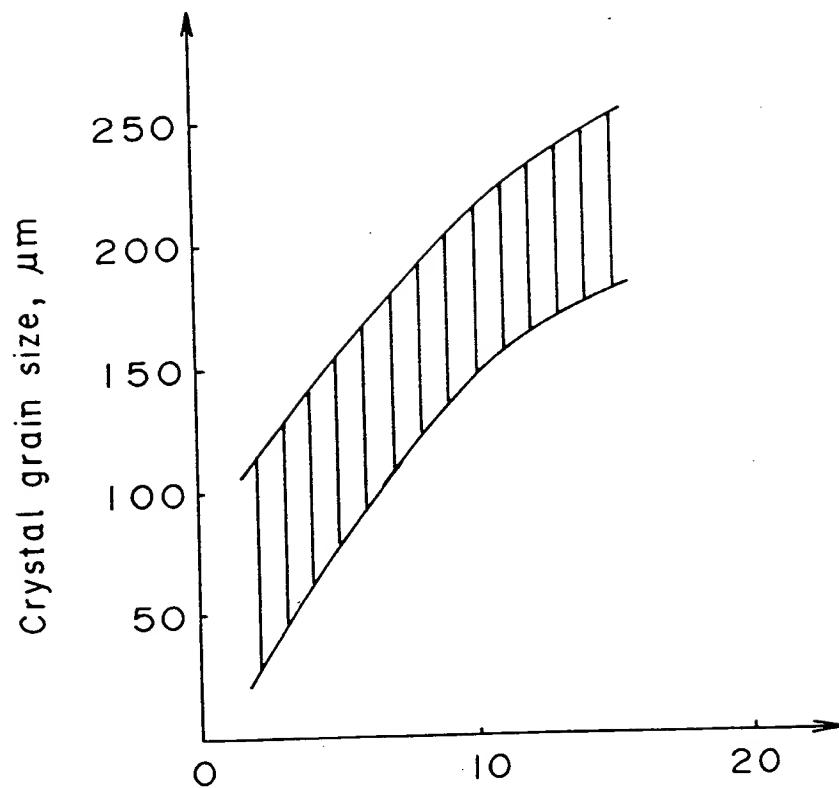
Holding time from the initial temperature
in insulated vessel to the liquidus temperature, min

FIG. 19



Holding time from the initial temperature
in insulated vessel to the liquidus
temperature minus 5°C, min

FIG. 20



Holding time from the initial temperature
in insulated vessel to the liquidus
temperature minus 5°C , min

FIG. 21

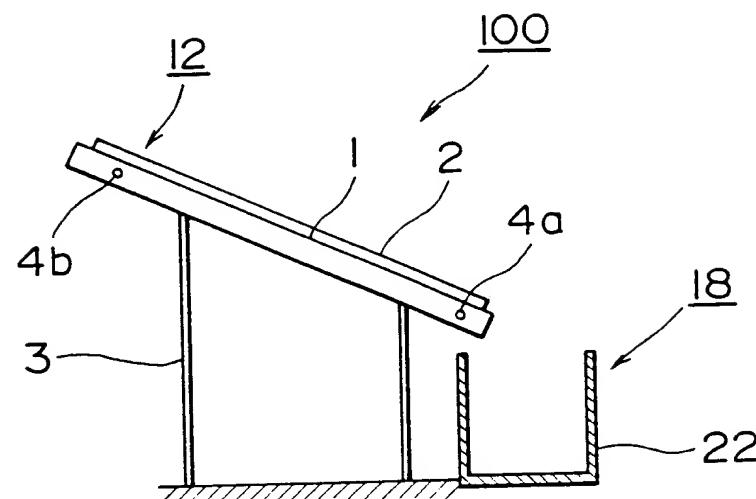


FIG. 22

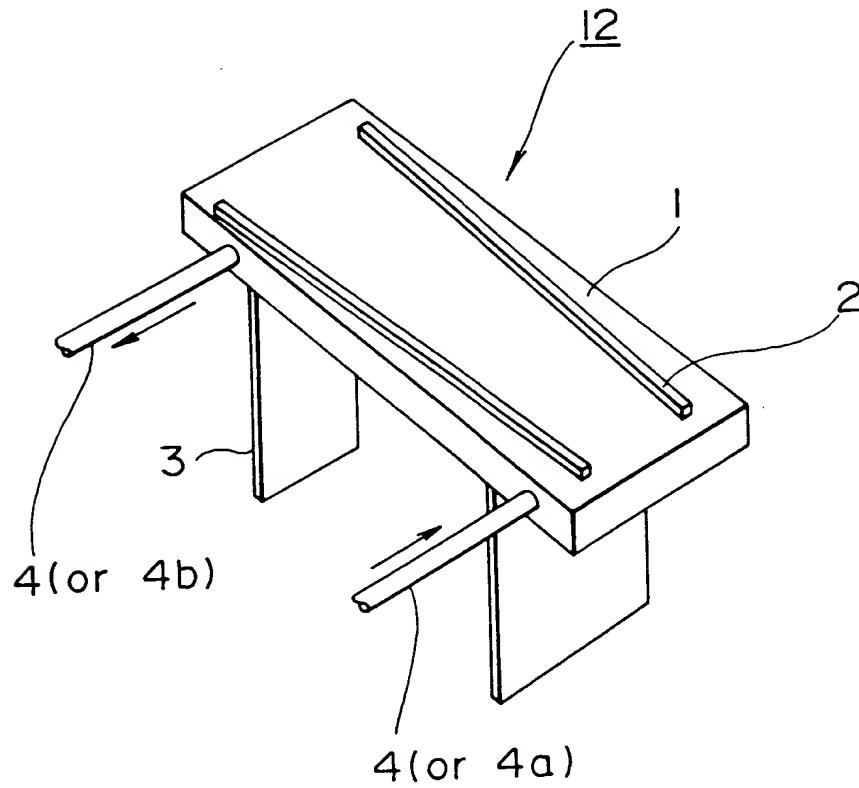


FIG. 23(a)

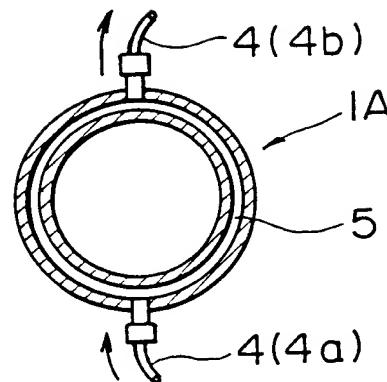


FIG. 23(b)

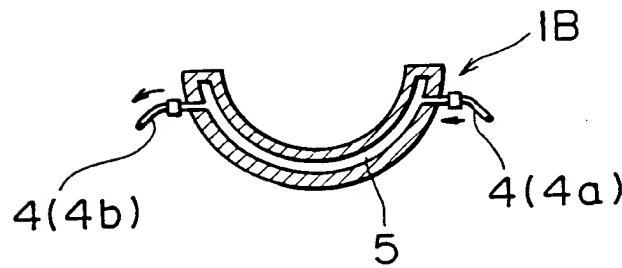


FIG. 24

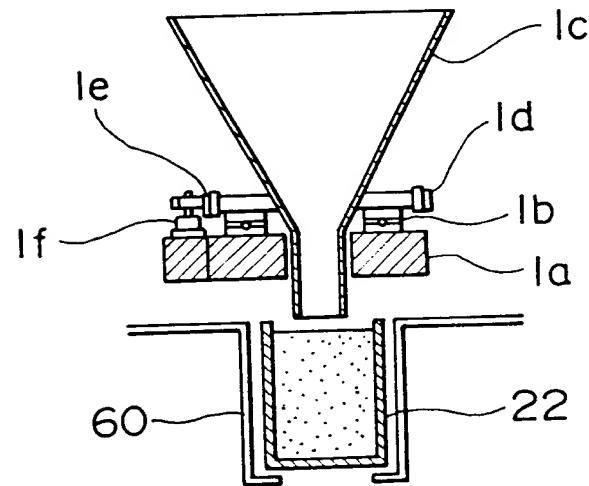


FIG. 25

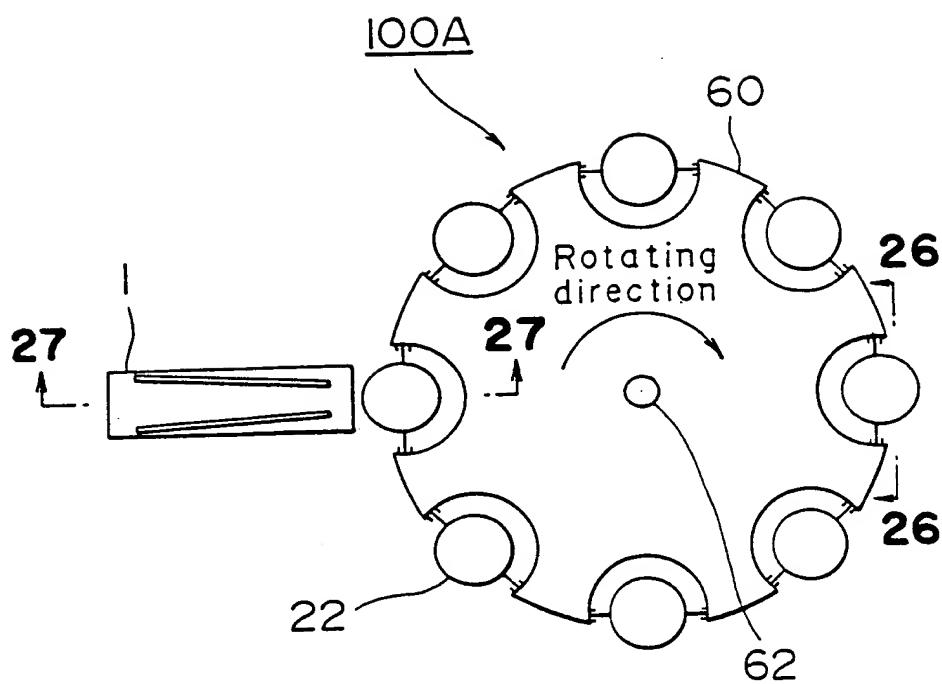


FIG. 26

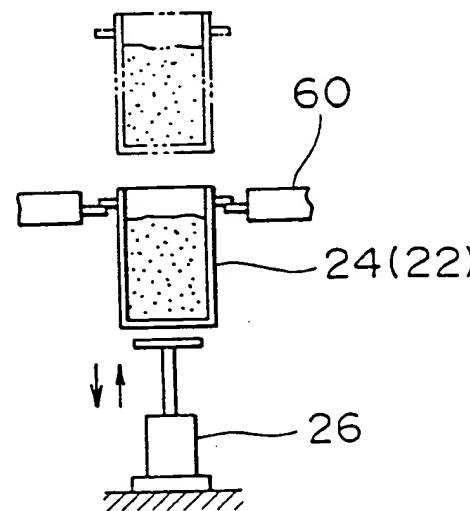


FIG. 27

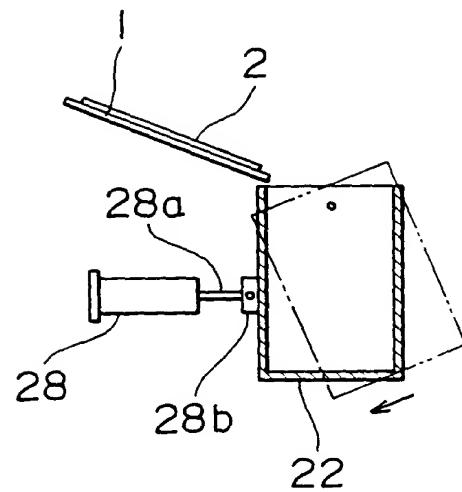
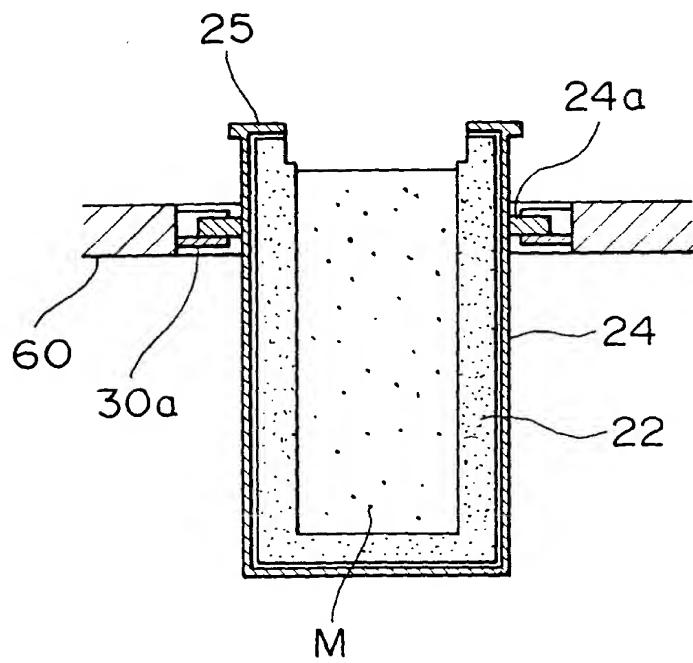


FIG. 28



APPROVED
BY

CLASSIFIED
DRAFTSMAN

FIG. 29

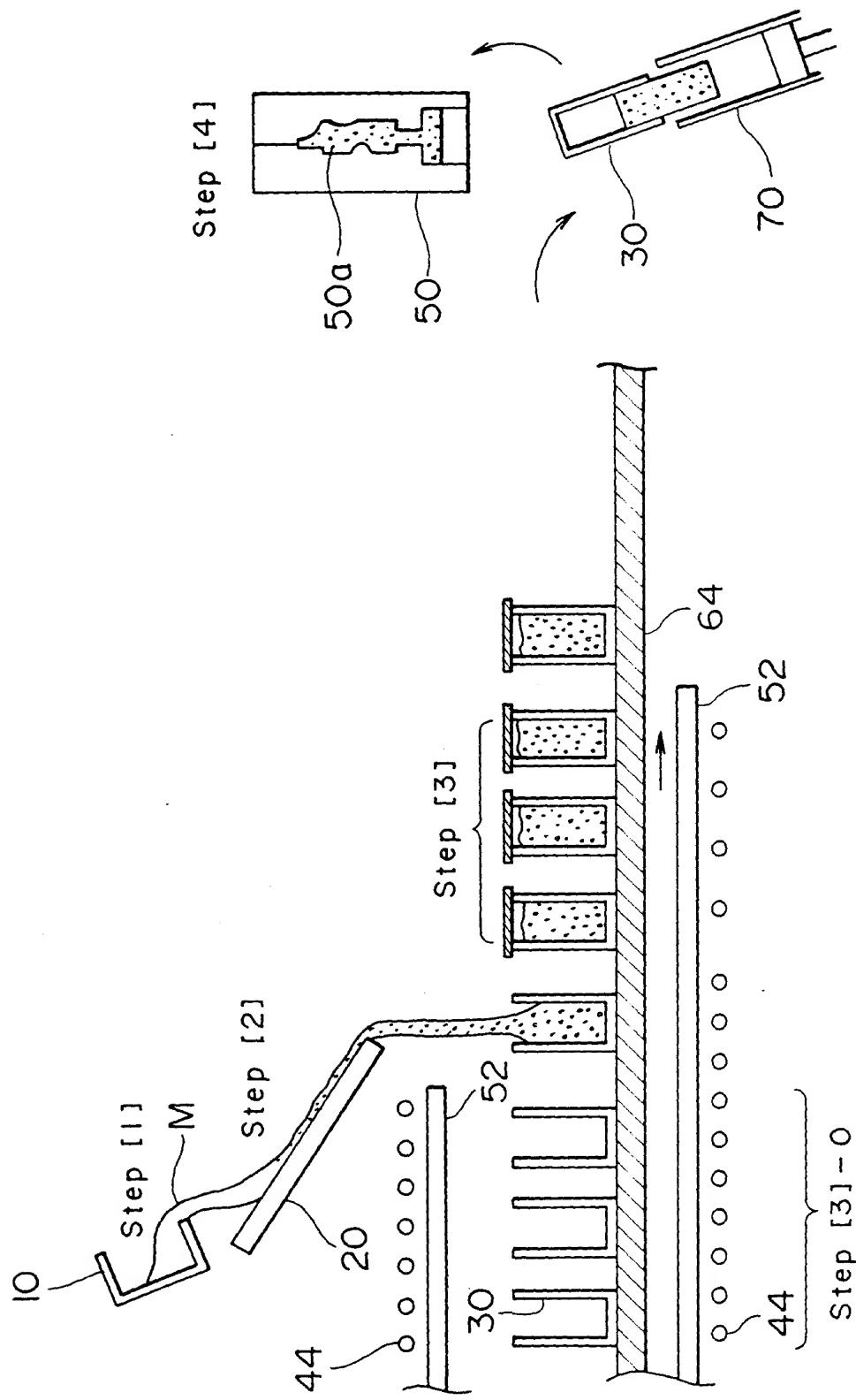


FIG. 30(a)
Left to cool at
both top and bottom

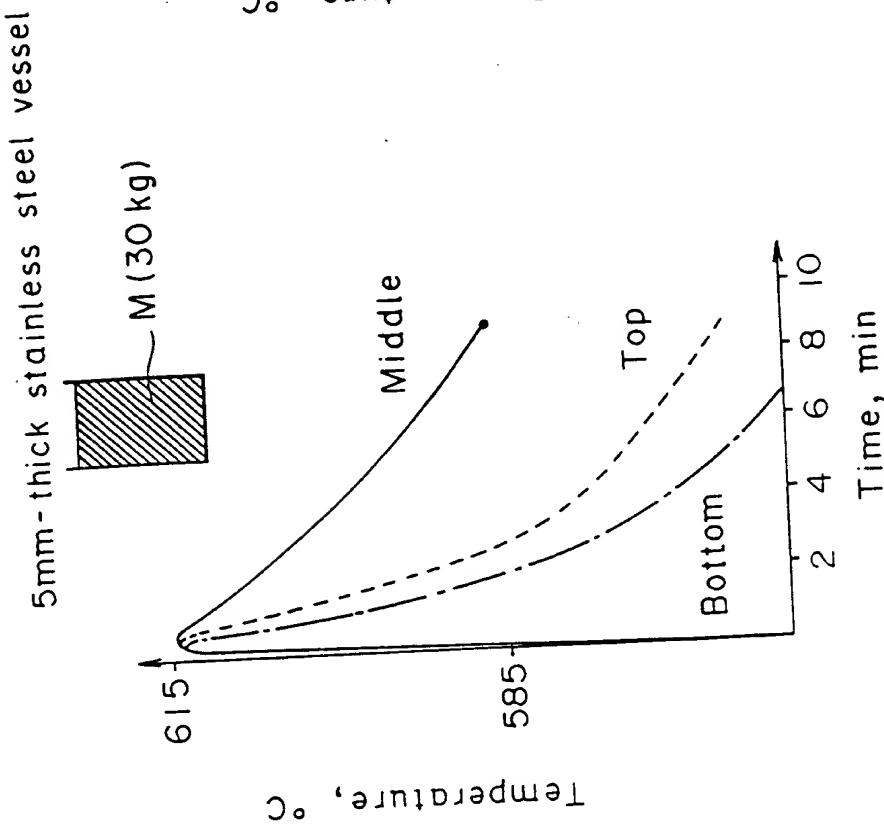


FIG. 30(b)
Heat-retained at top
but heated at bottom

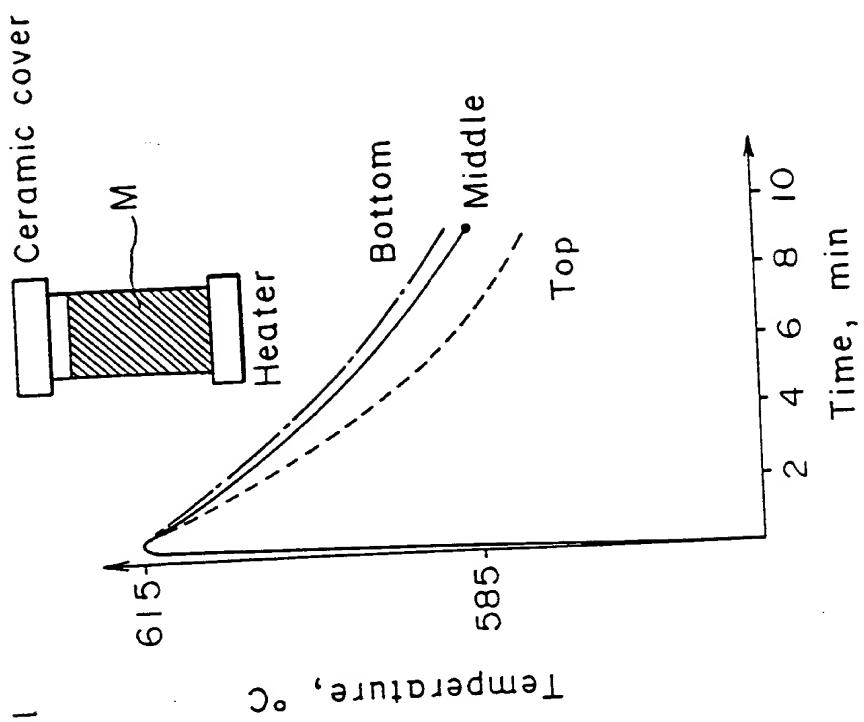
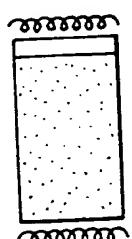


FIG. 31(a)

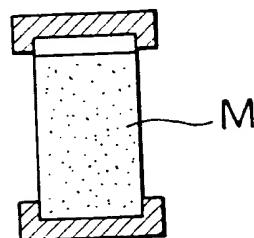
Heated



Heated

FIG. 31(b)

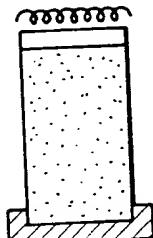
Heat-retained



Heat-retained

FIG. 31(c)

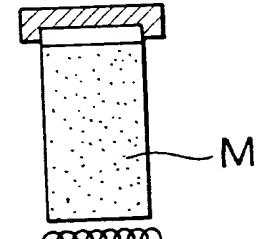
Heated



Heat-retained

FIG. 31(d)

Heat-retained



Heated

FIG. 32

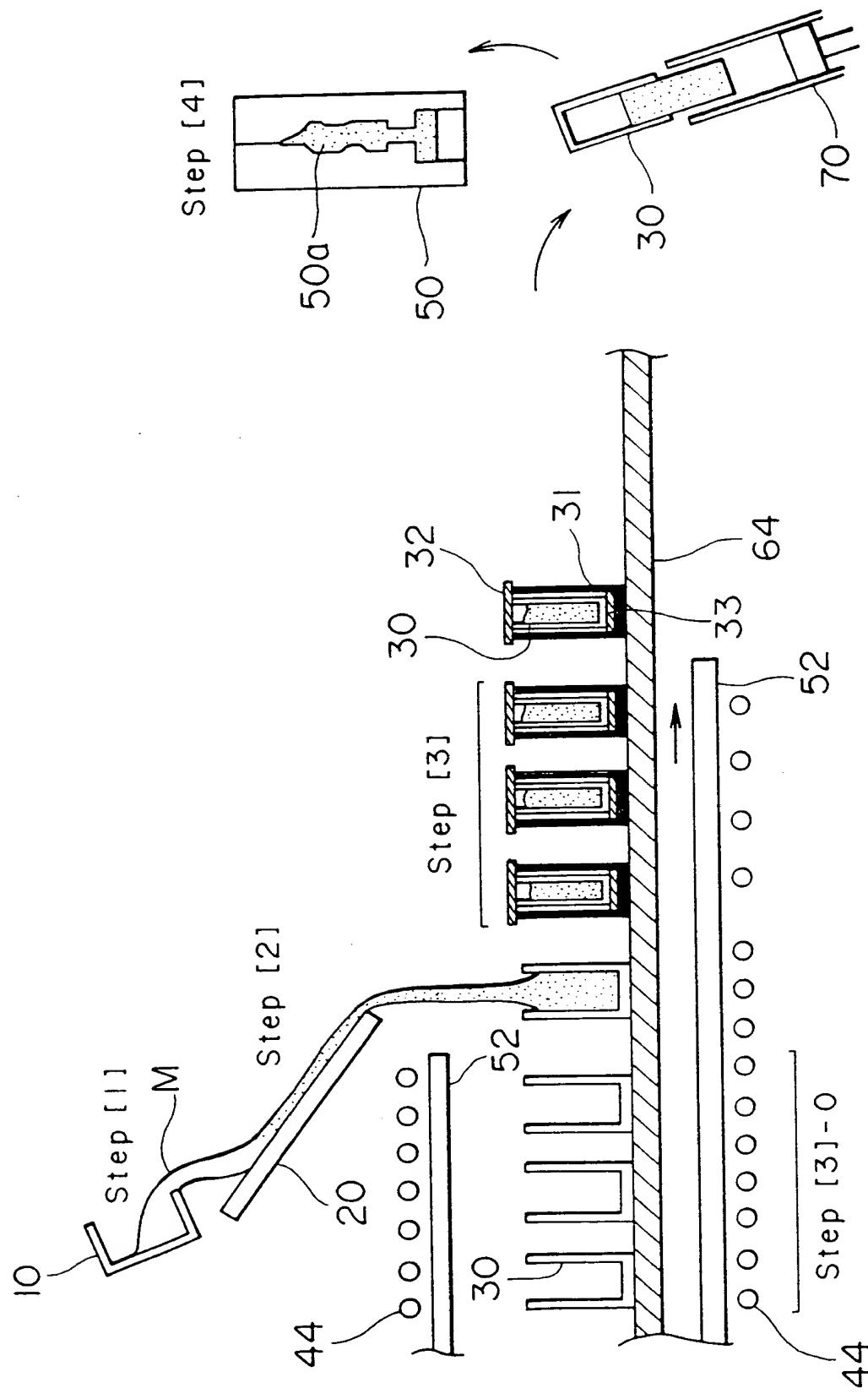


FIG. 33(a)

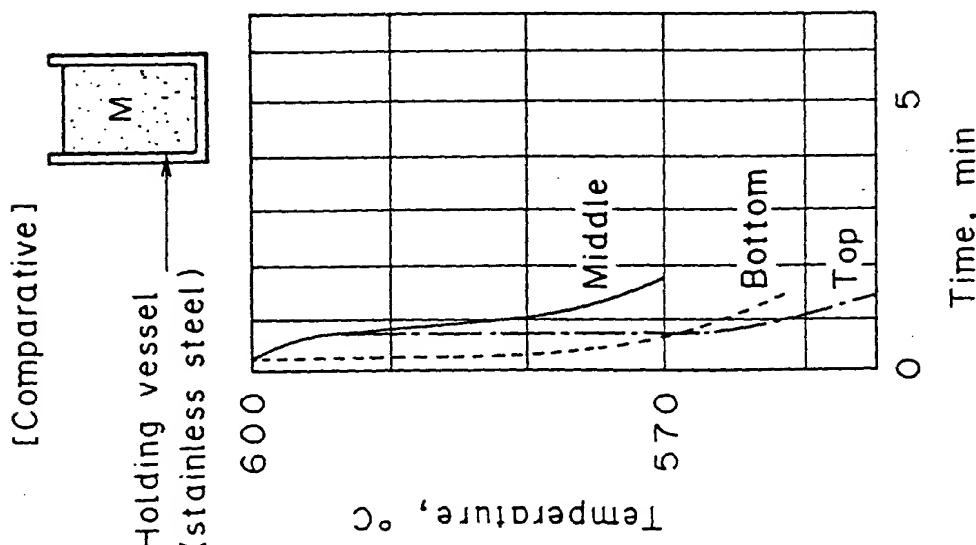


FIG. 33(b)

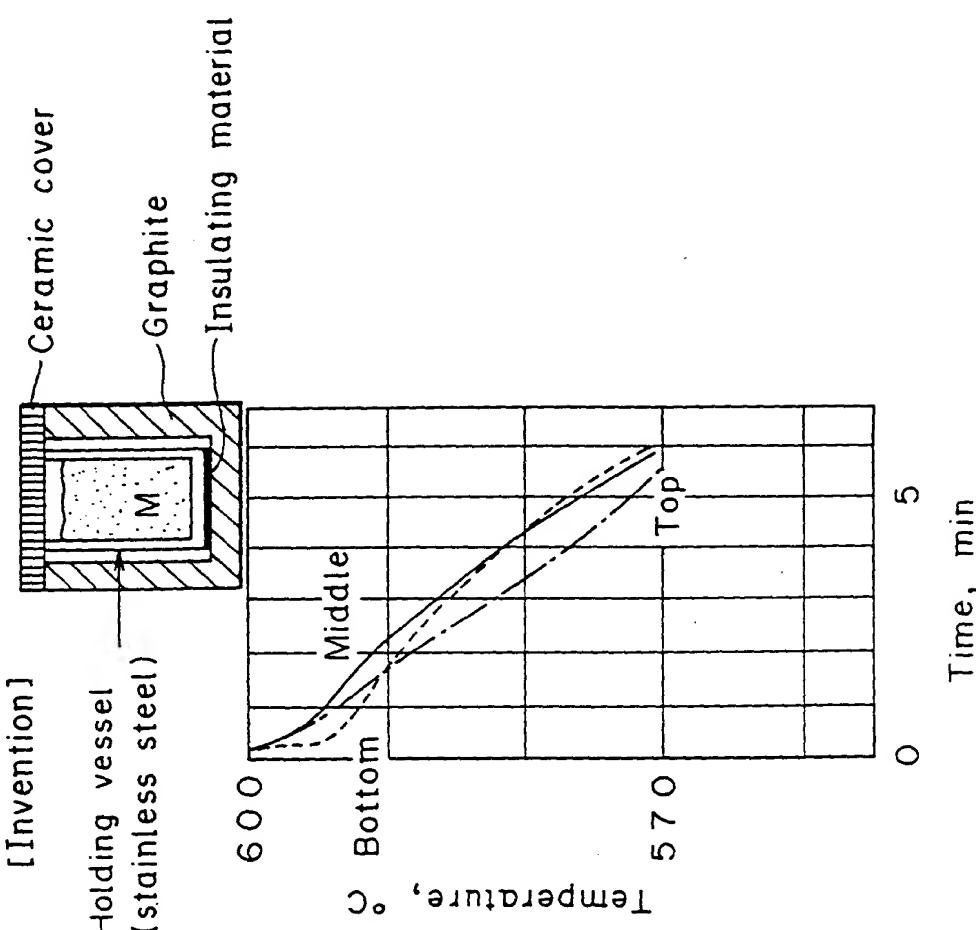
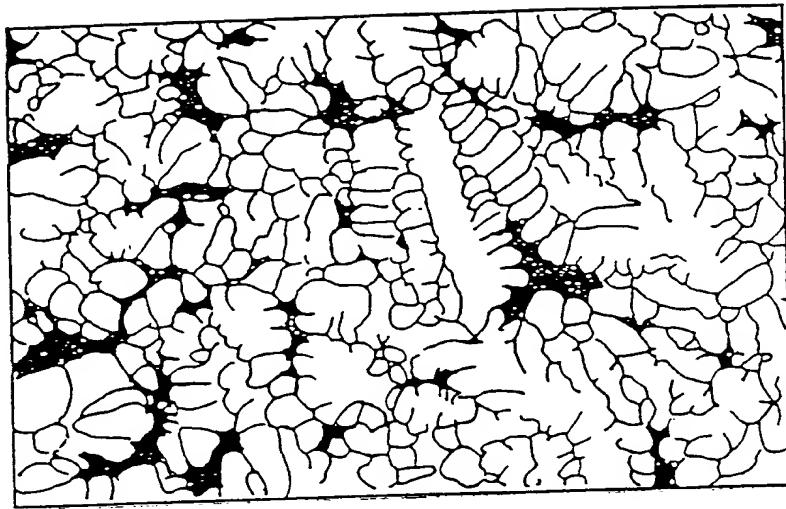
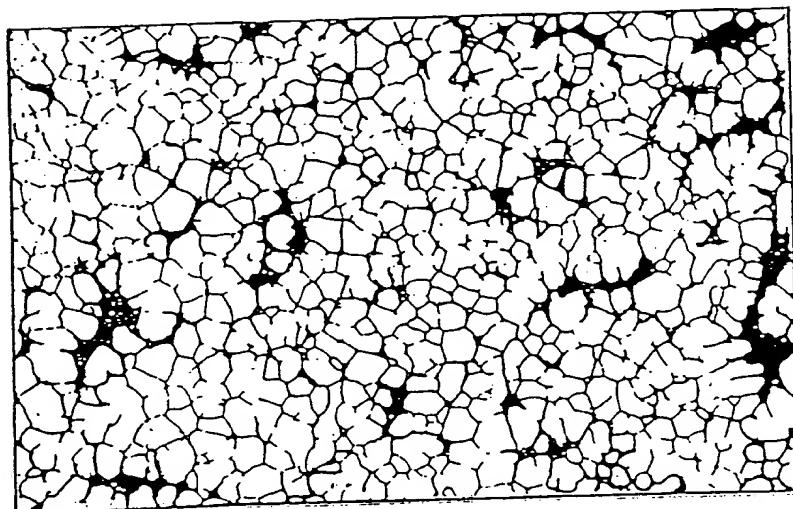


FIG. 34 Prior Art



200 μ m

FIG. 35



200 μ m

FIG. 36

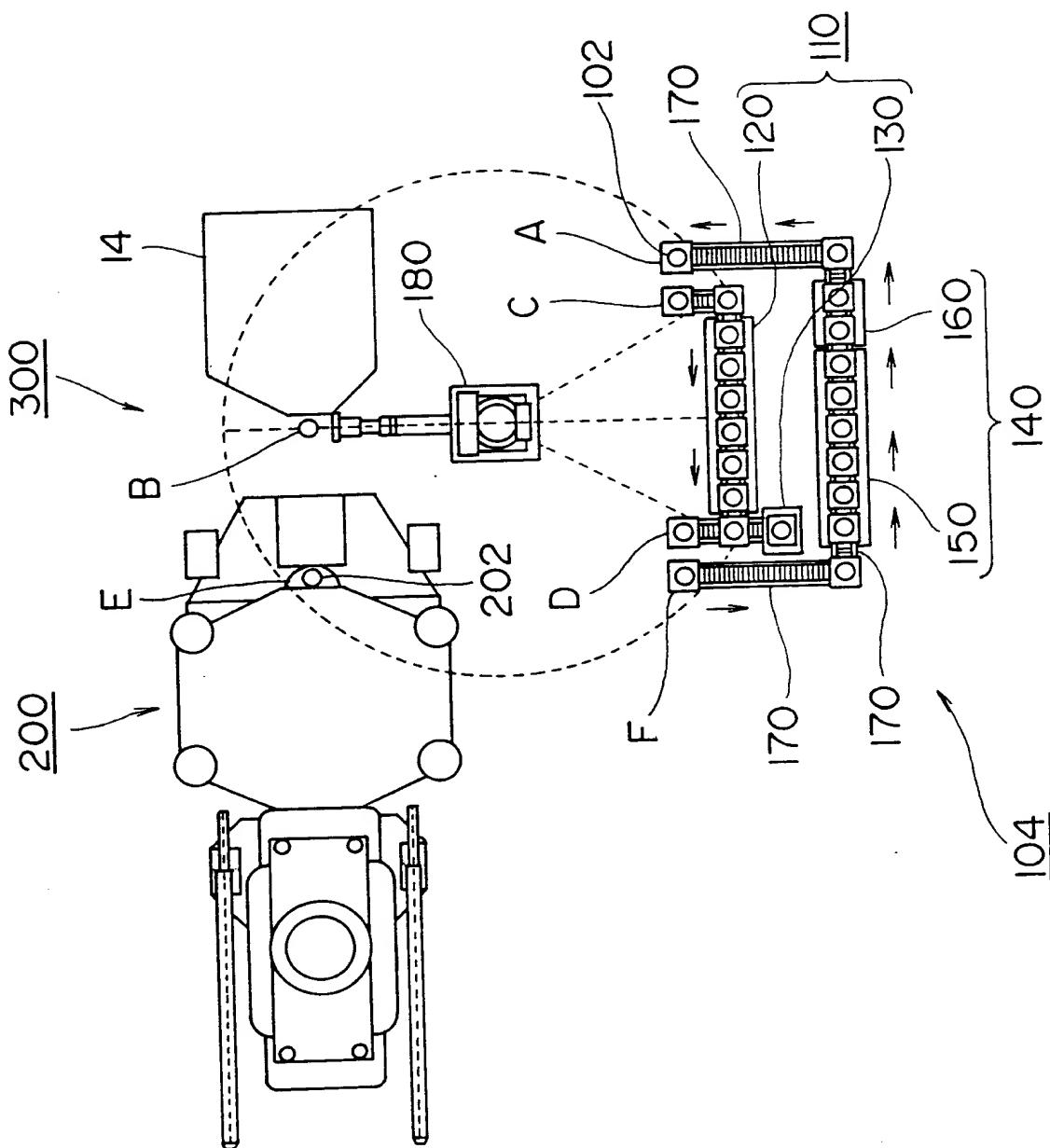


FIG. 37

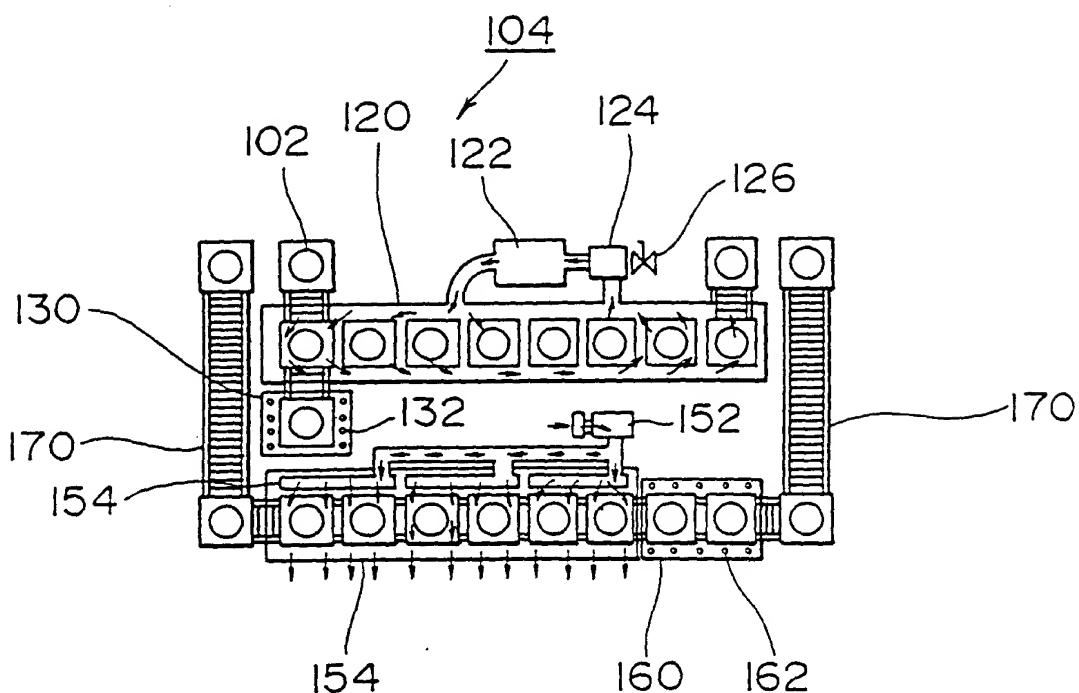


FIG. 38

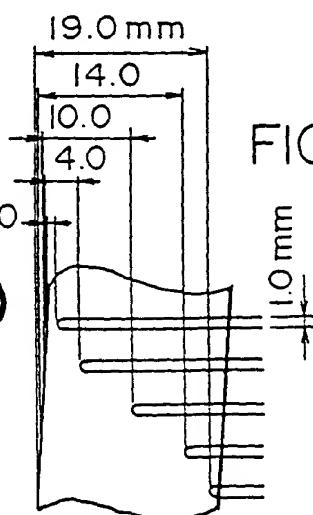
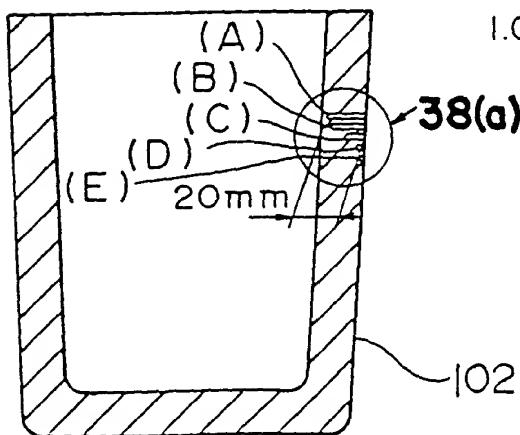


FIG. 38(a)

FIG. 39

Semisolid metal cooling furnace
Vessel cooling zone

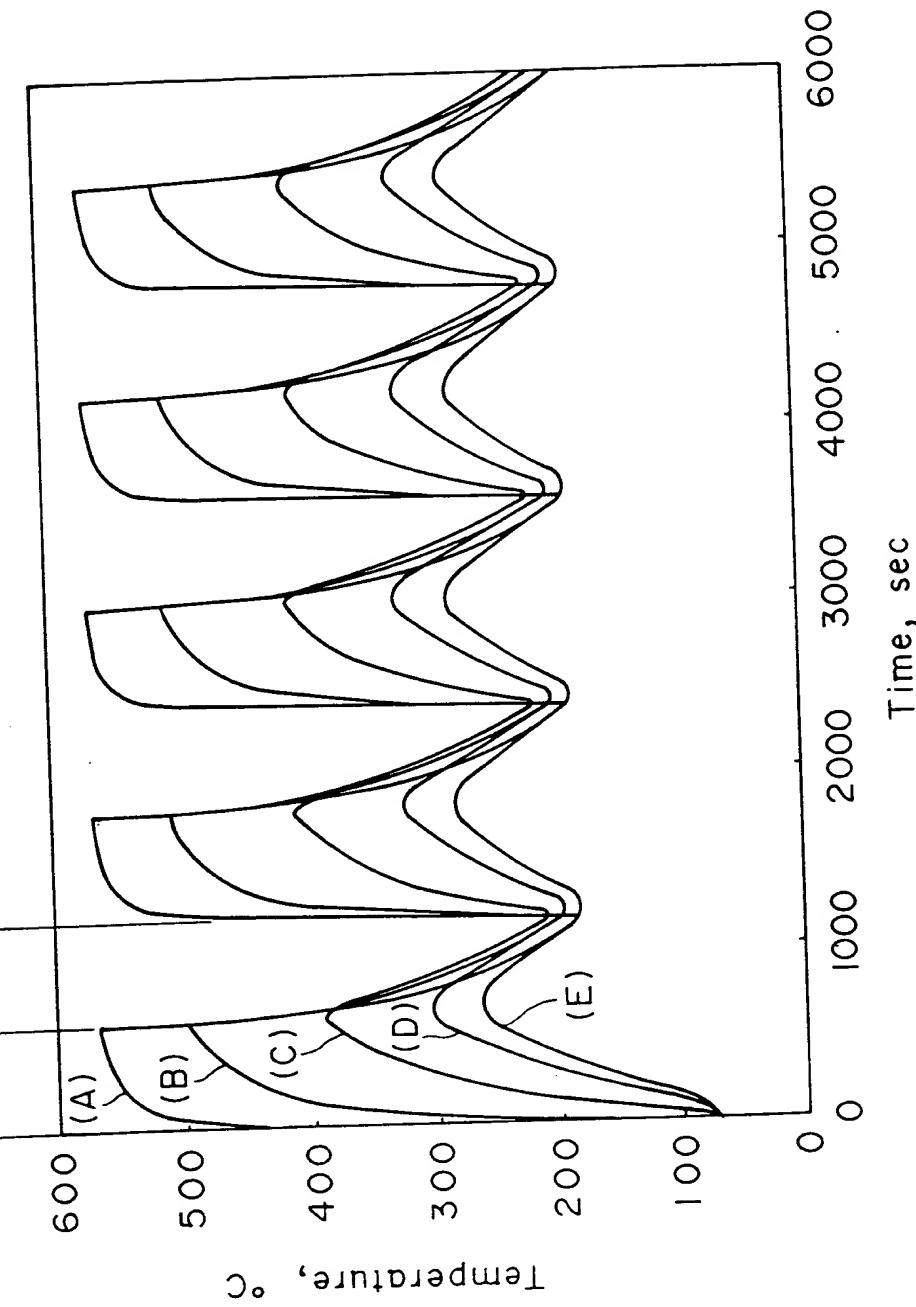


FIG. 40

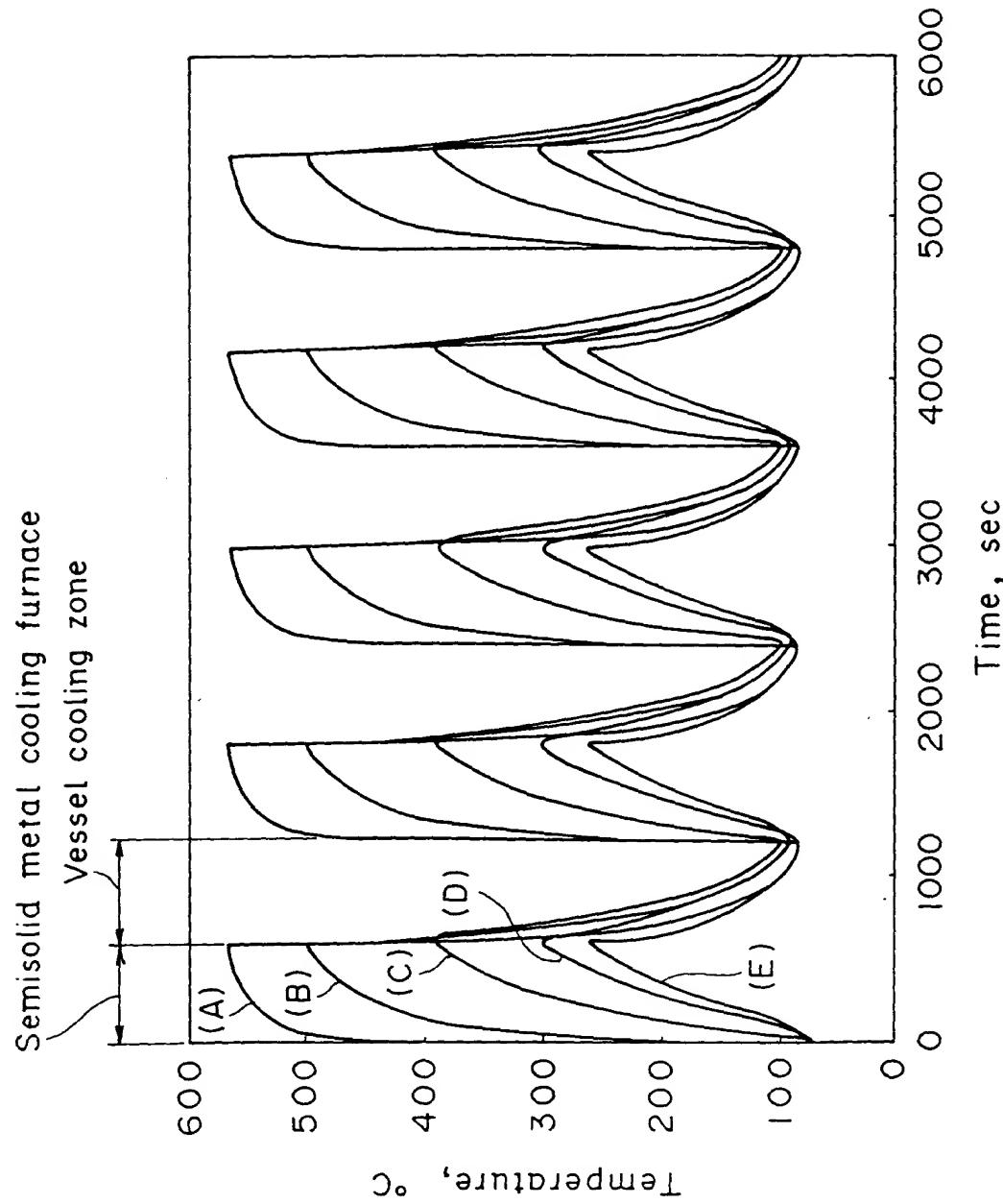


FIG. 41

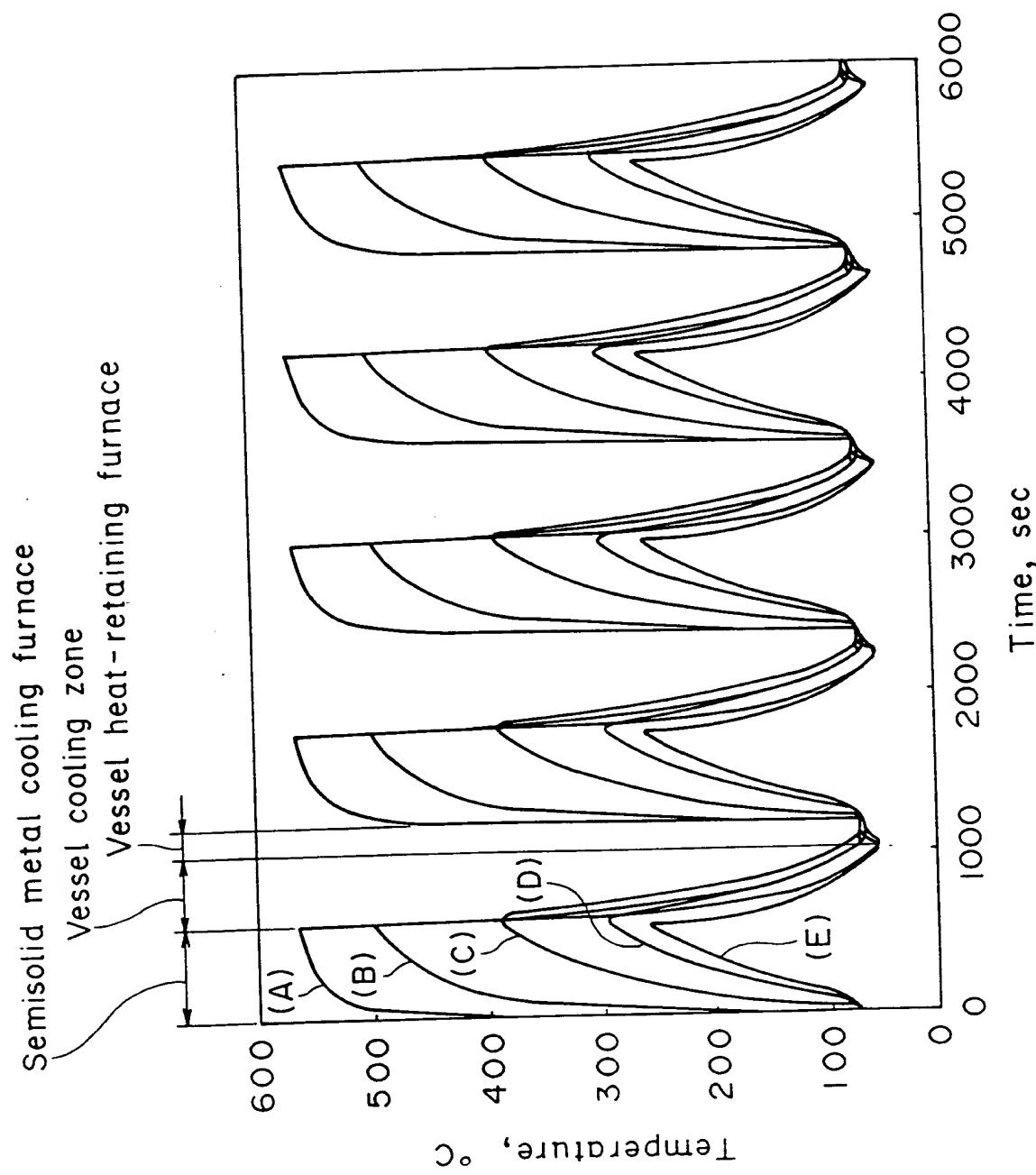


FIG. 42

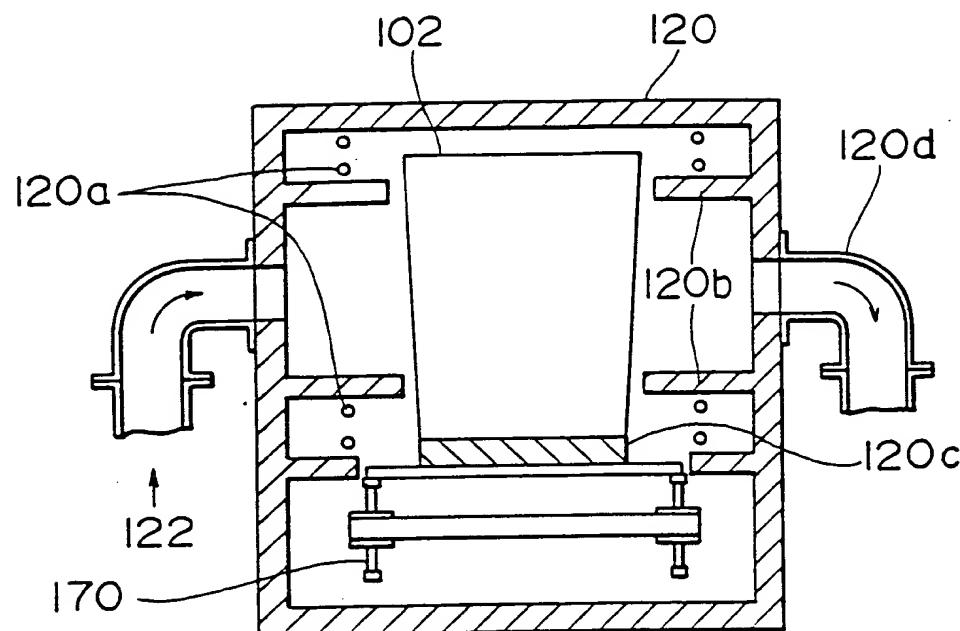


FIG. 43

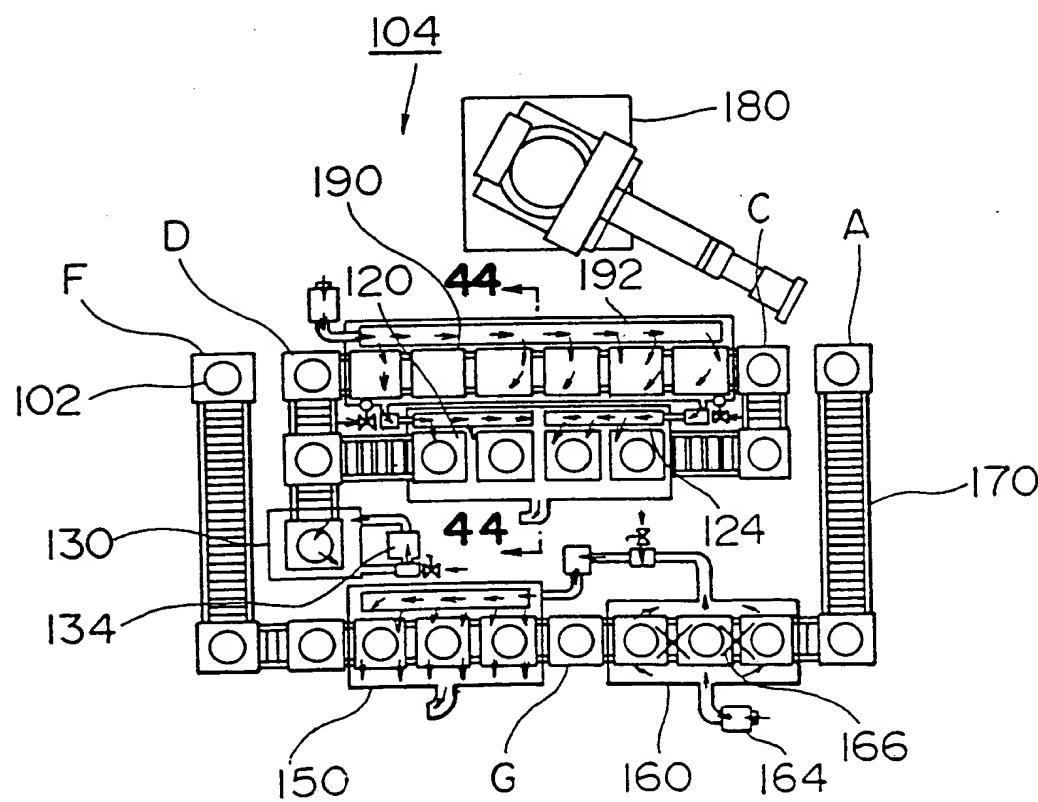


FIG. 44

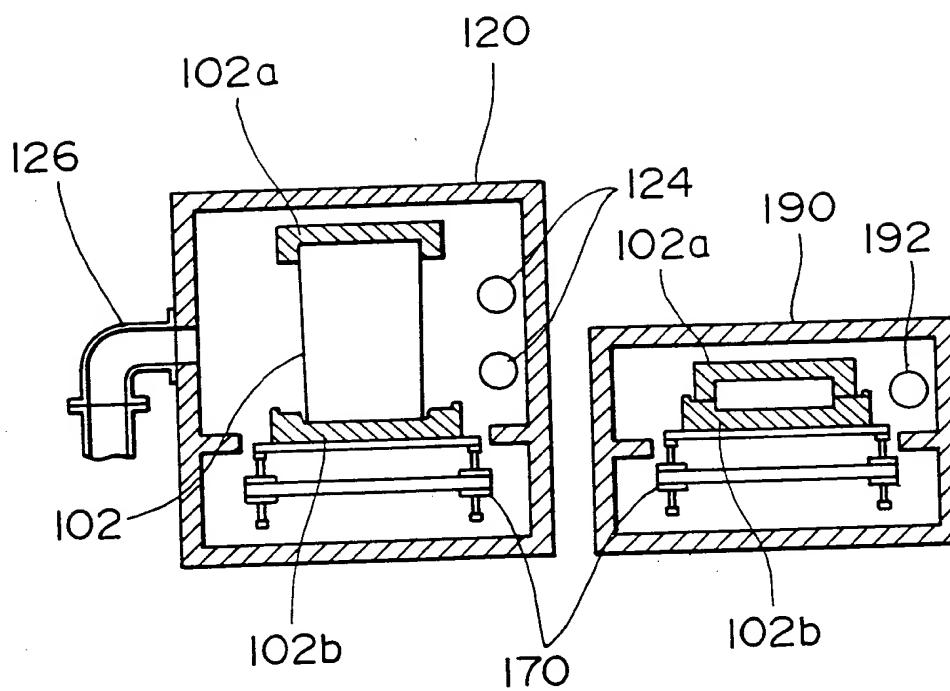


FIG. 45(a)
SUS304
preheated to 200°C
Temperature of atmosphere: 200°C

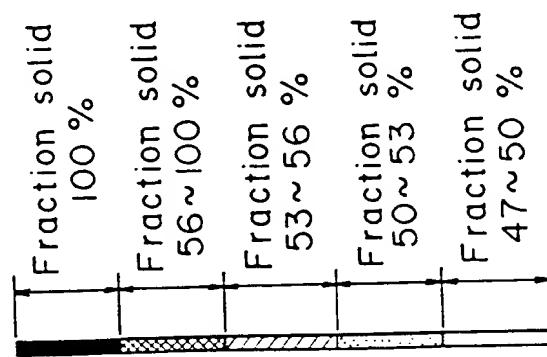


FIG. 45(b)

SUS304
preheated to 200°C
Al₂O₃-SiO₂ composite
preheated to 200°C

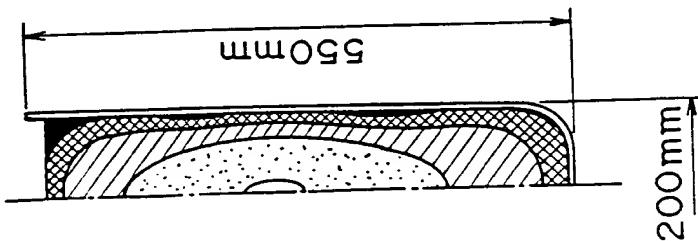


FIG. 45(c)

Al₂O₃-SiO₂ composite
preheated to 200°C
Al₂O₃-SiO₂ composite
preheated to 200°C

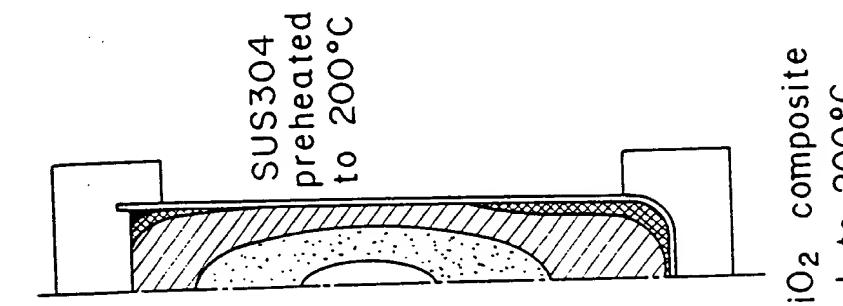


FIG. 45(d)

Al₂O₃-SiO₂ composite
preheated to 350°C
Al₂O₃-SiO₂ composite
preheated to 350°C

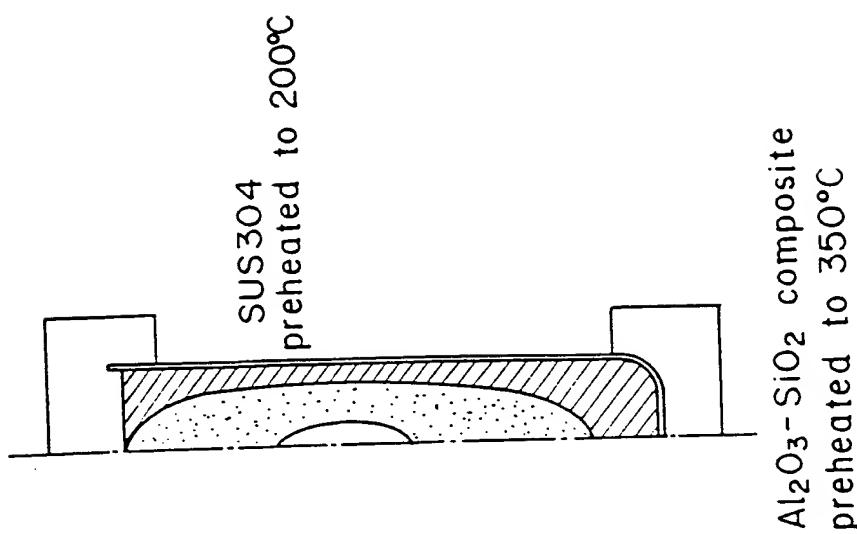


FIG. 46

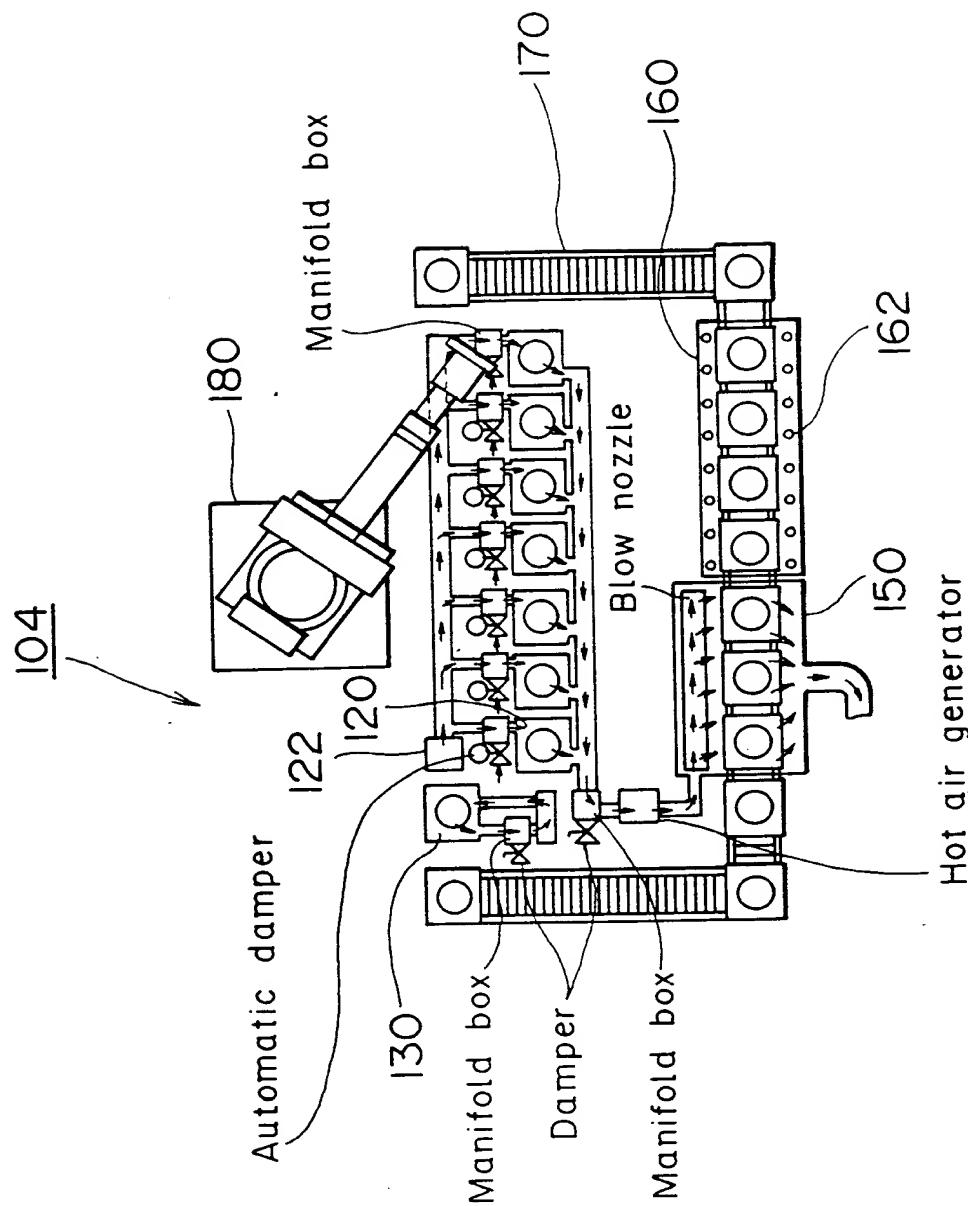
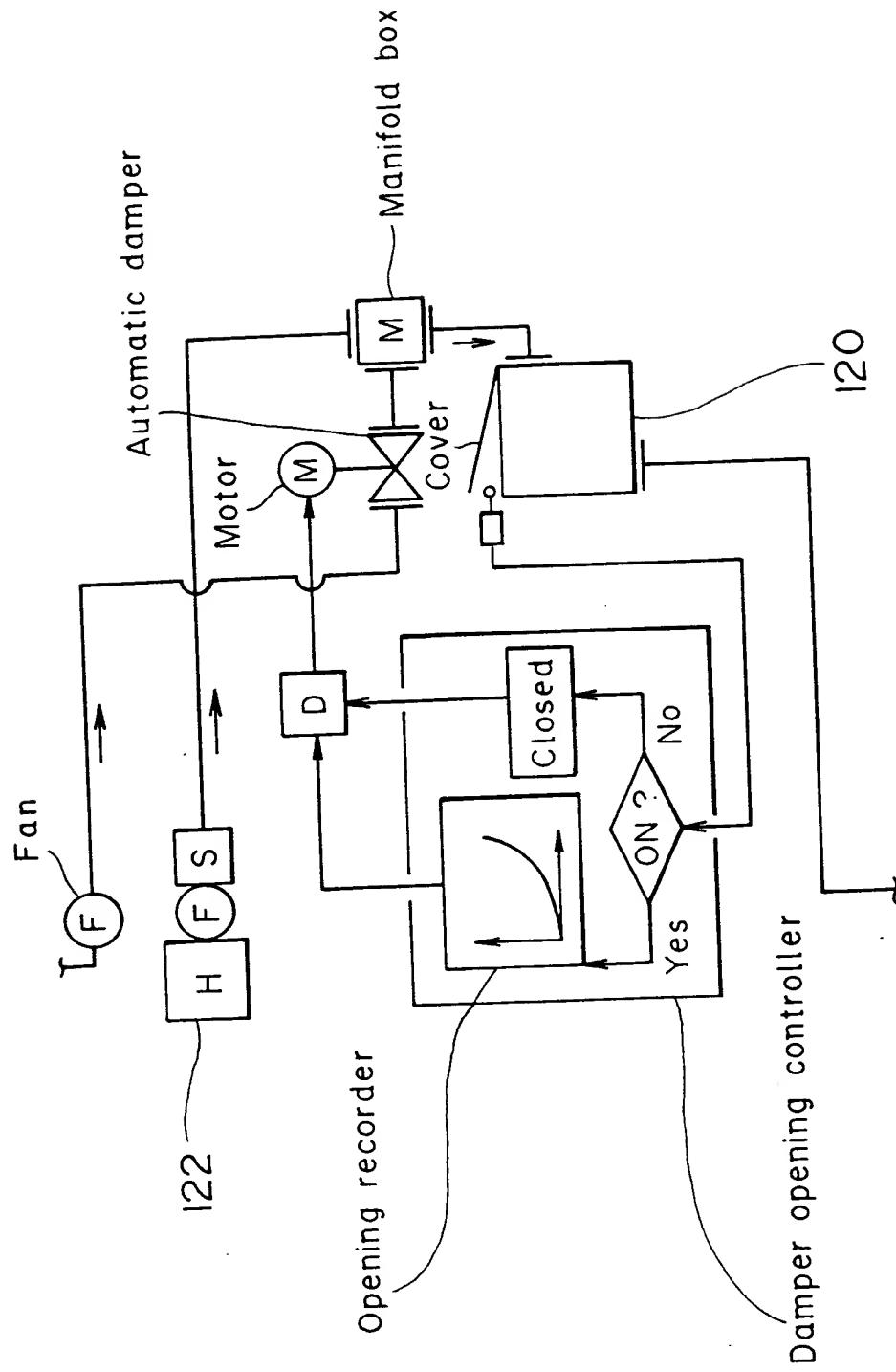


FIG. 47



APPROVE	BY	CLASS	SUBCLAS
DRAFTSMAN			

FIG. 48

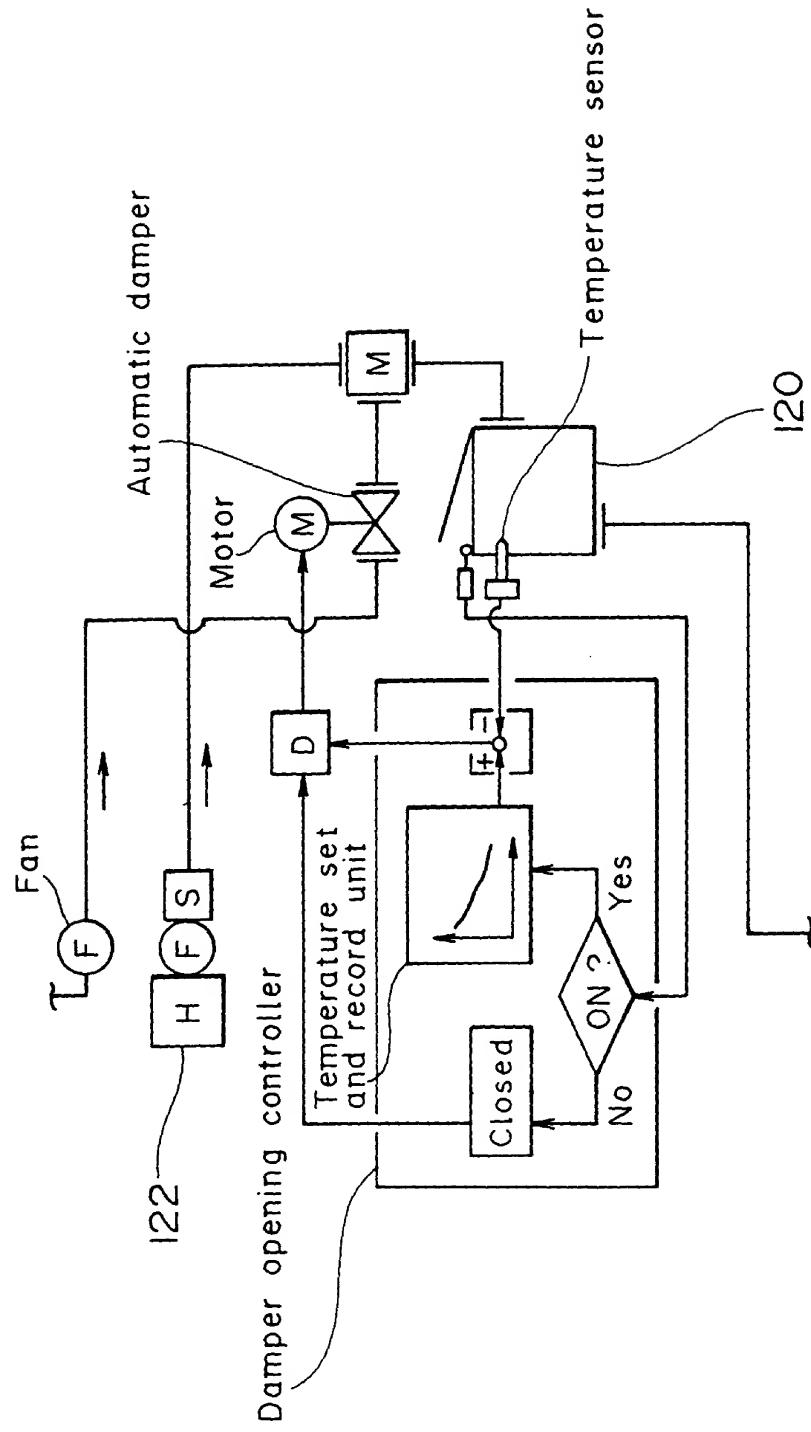


FIG. 49

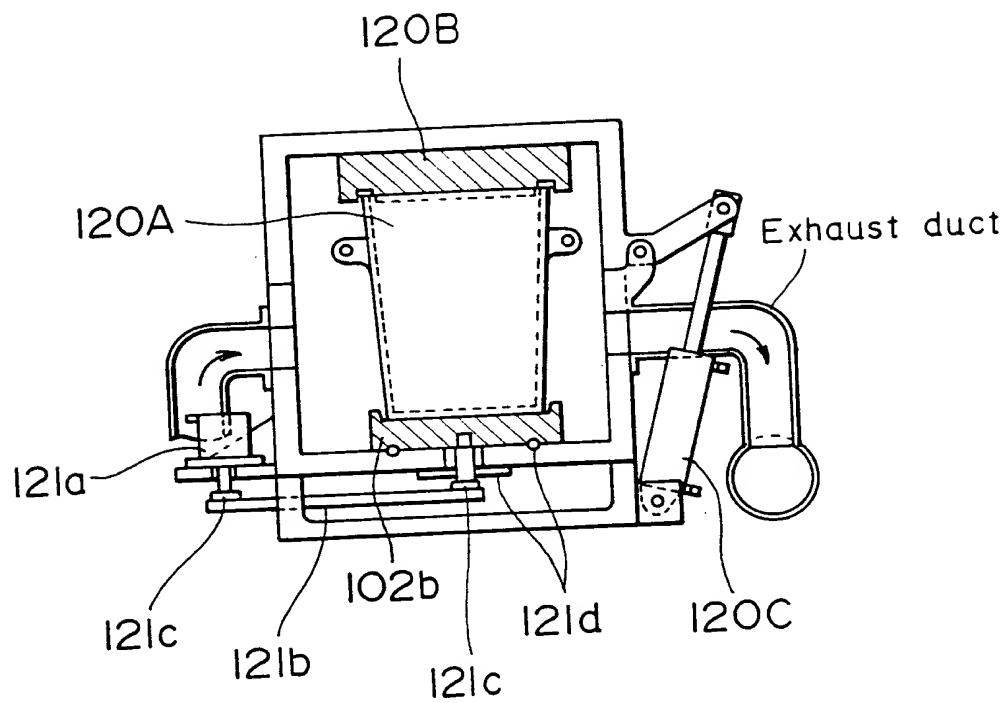


FIG. 50

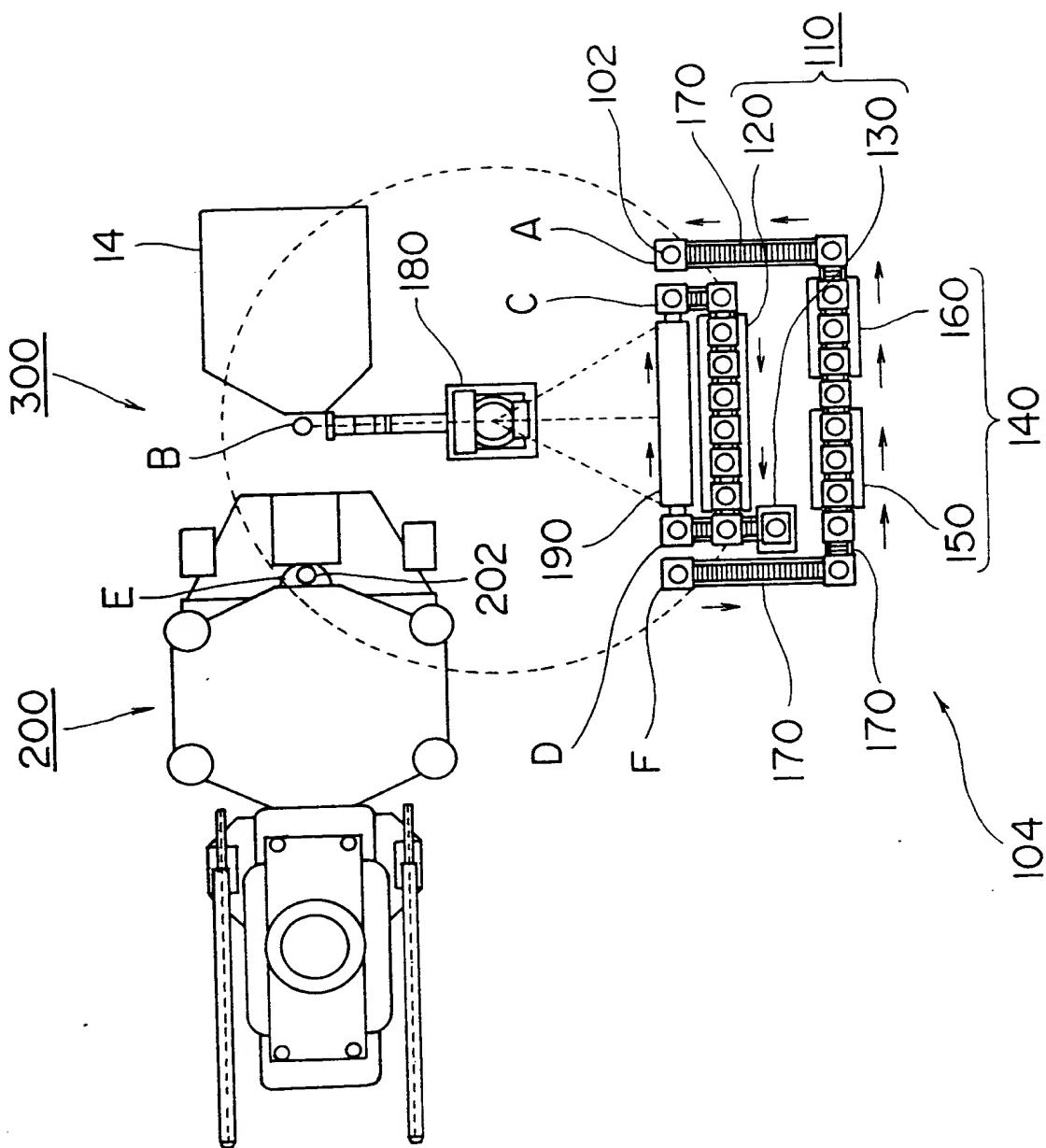


FIG. 51

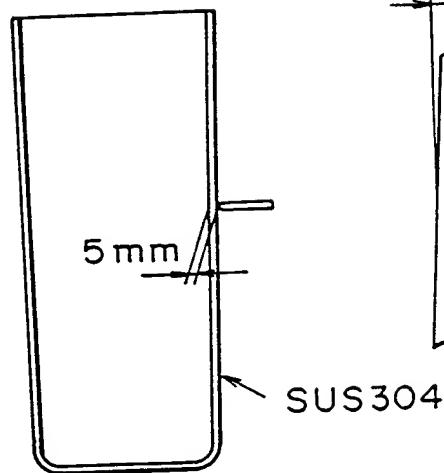


FIG. 51(a)

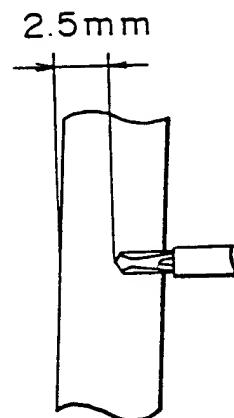


FIG. 52

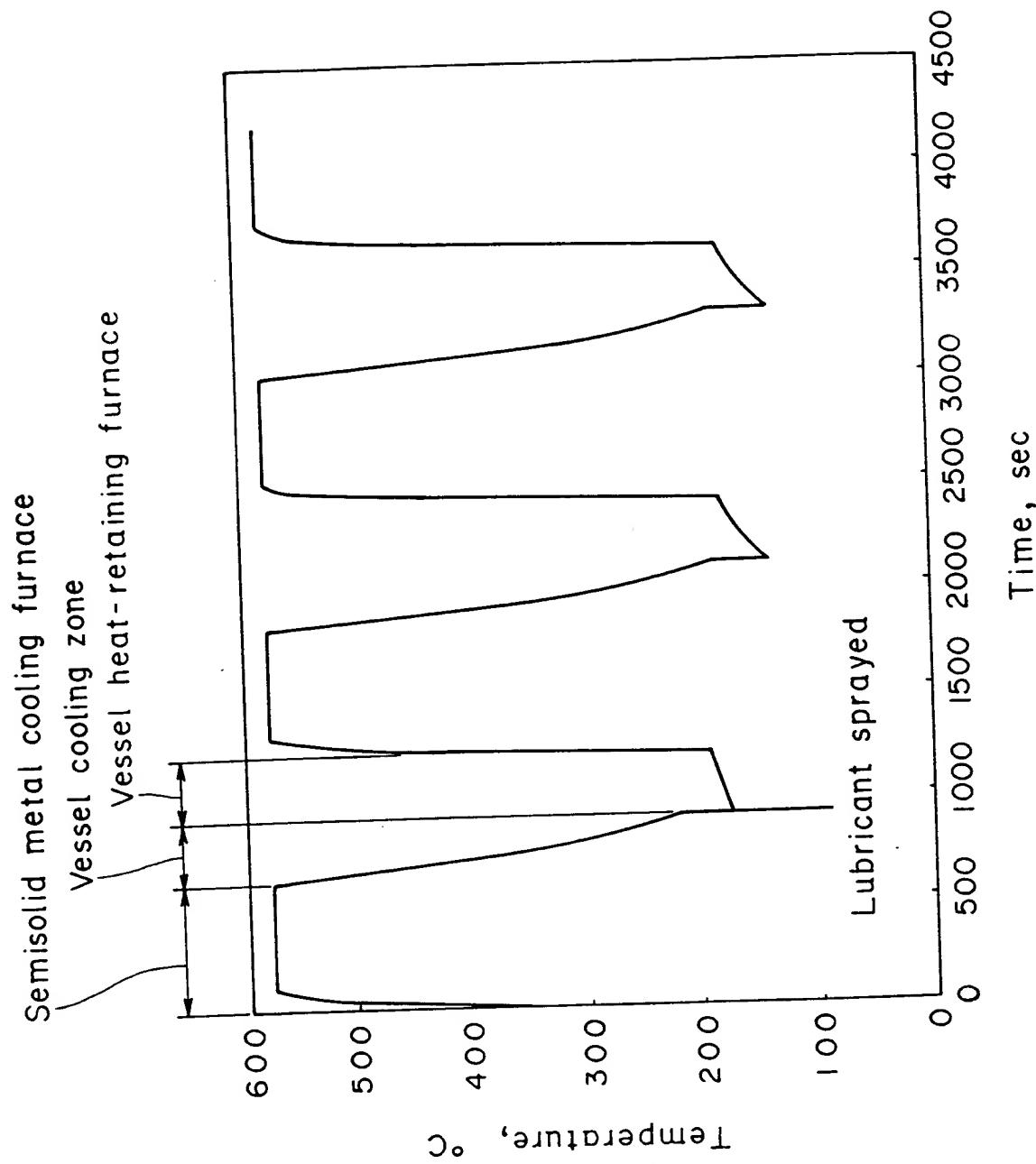


FIG. 53

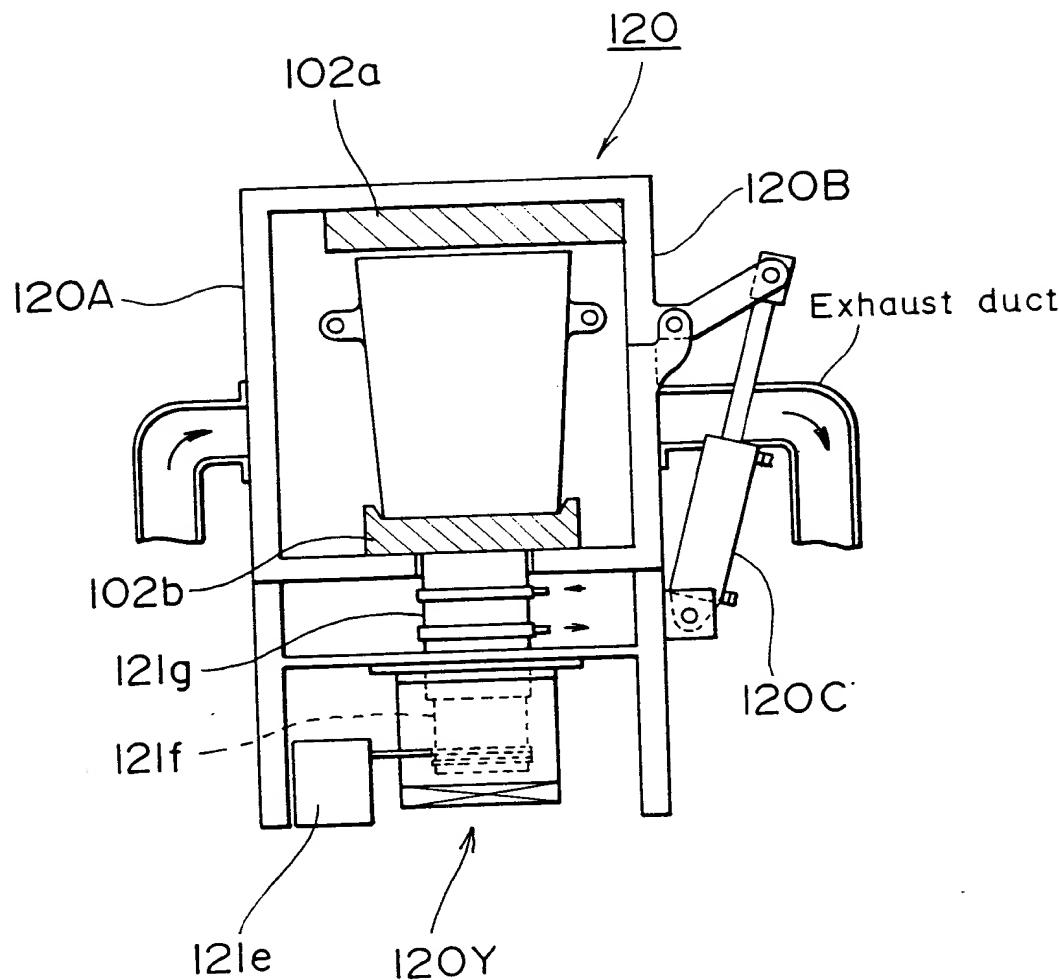


FIG. 54

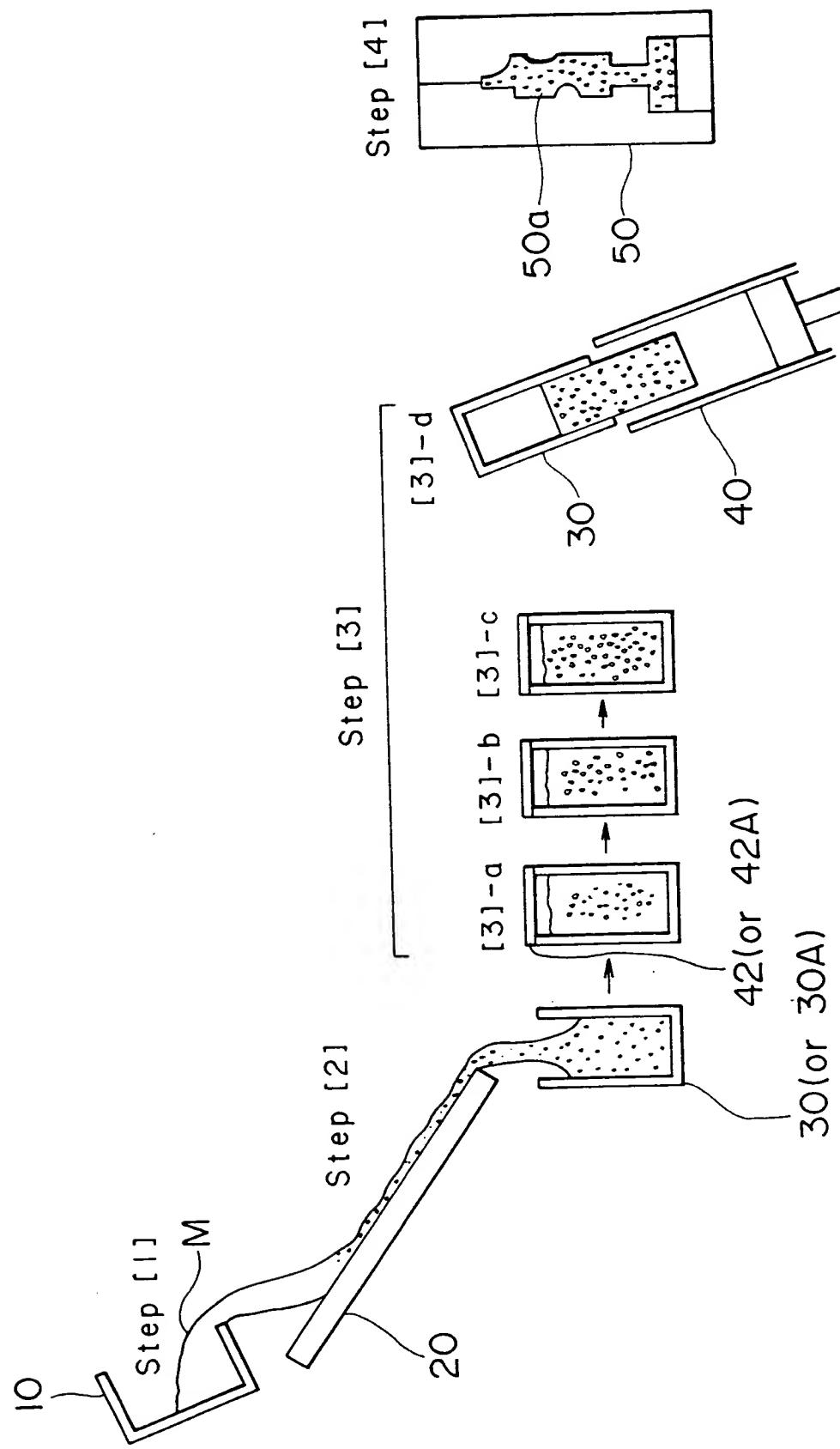


FIG. 55

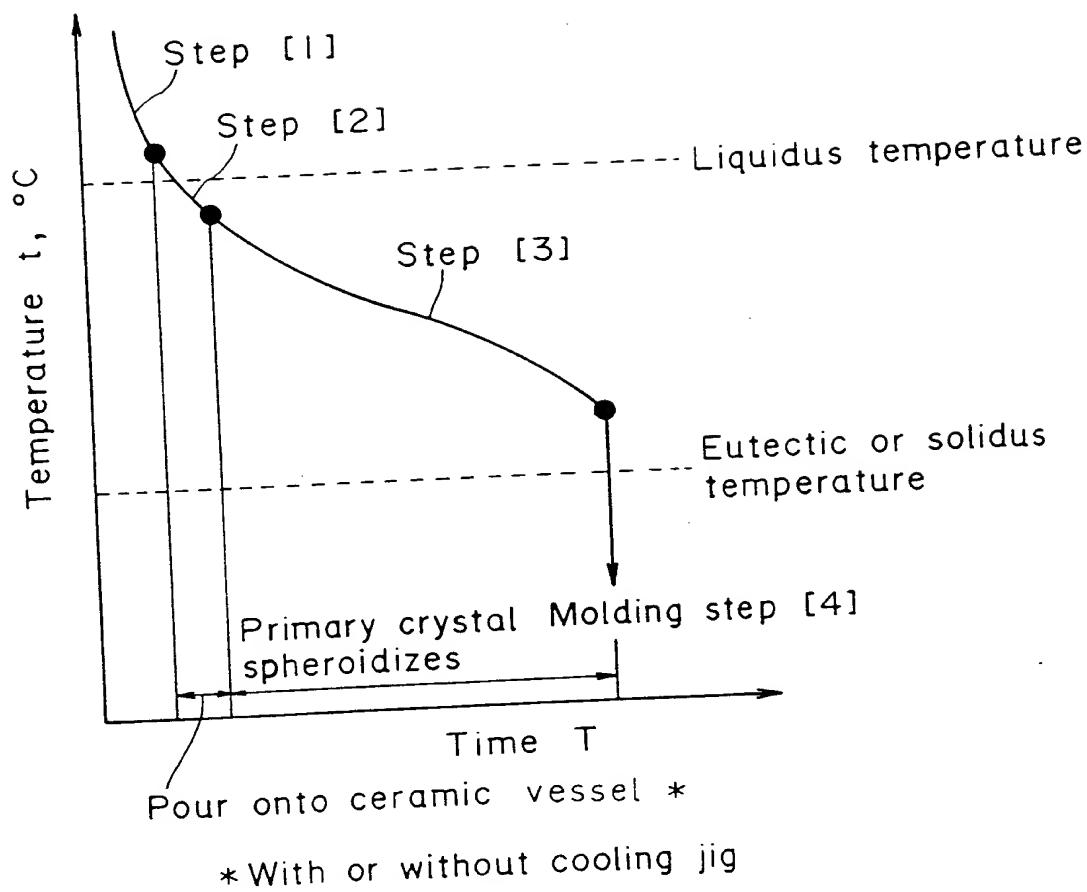


FIG. 56

Superheated to no more than 100°C
(without cooling jig) or 300°C
(with cooling jig) above liquidus temperature

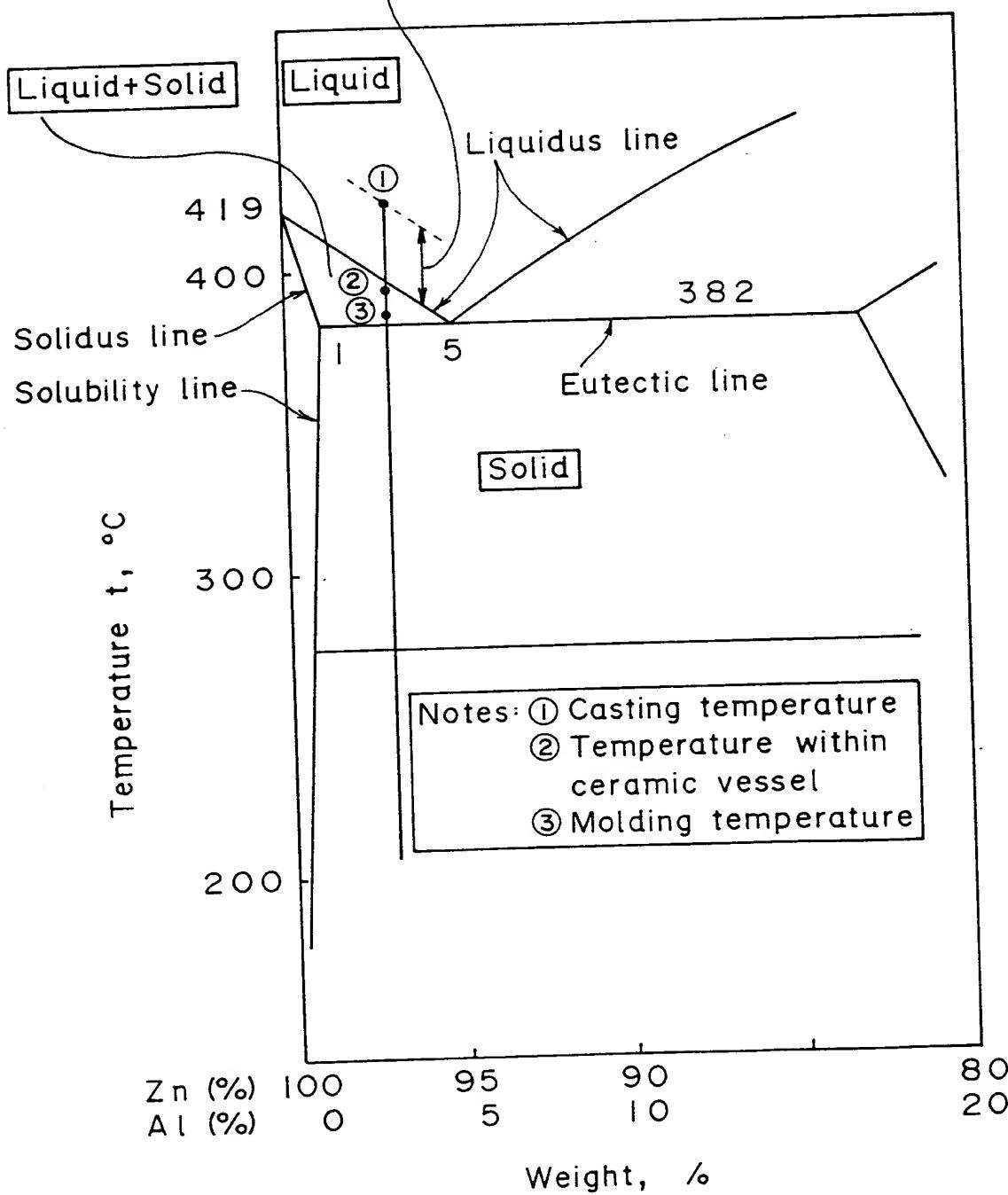


FIG. 57

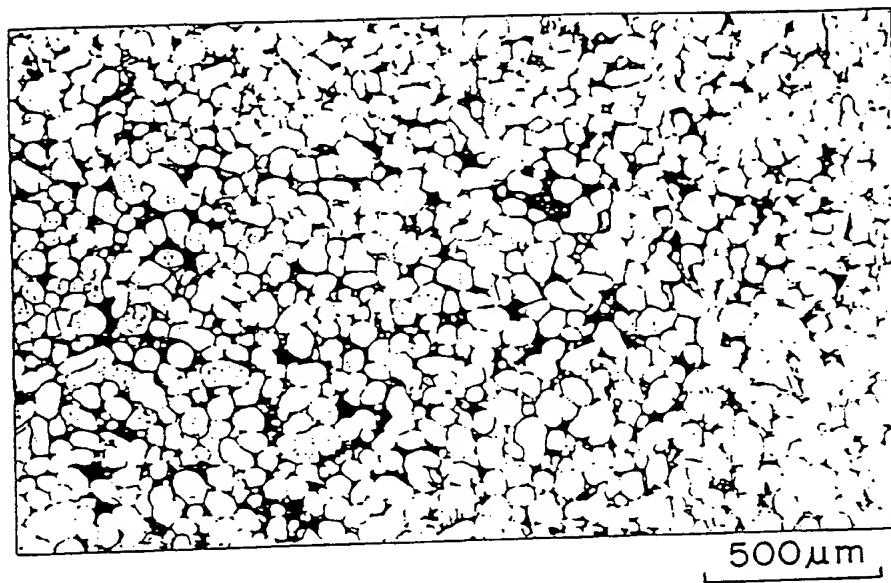
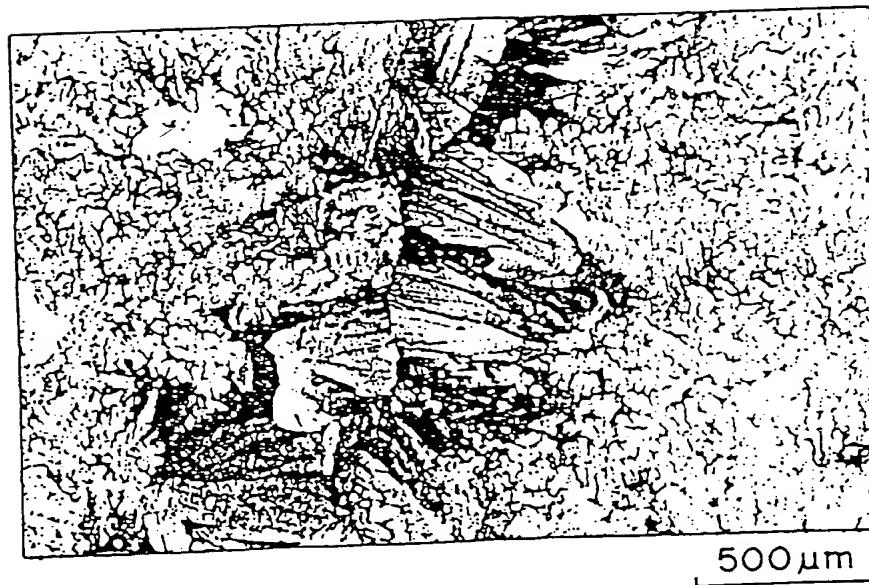


FIG. 58 Prior Art



APPROVED	BY
CLASS	SUBCLASS
DRAFTSMAN	

FIG. 59

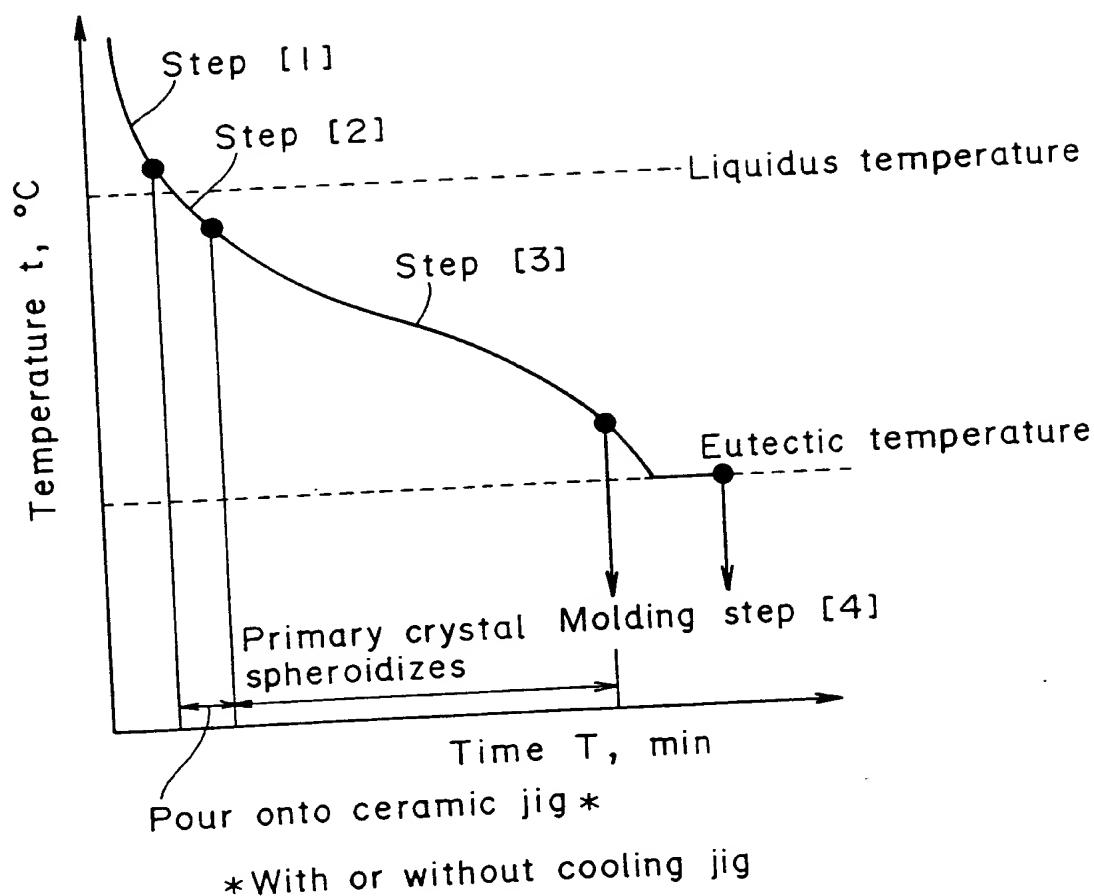


FIG. 60

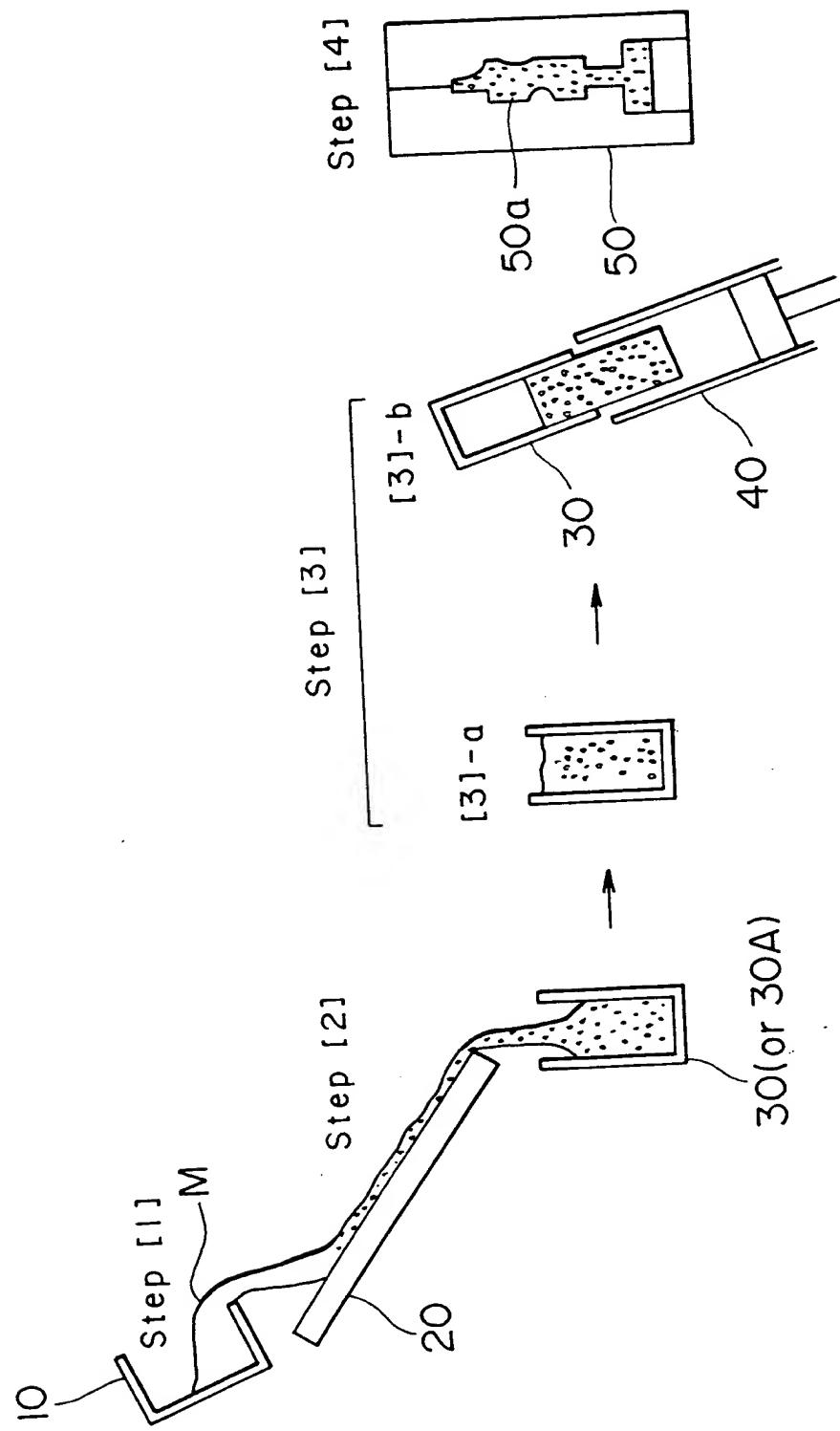


FIG. 61

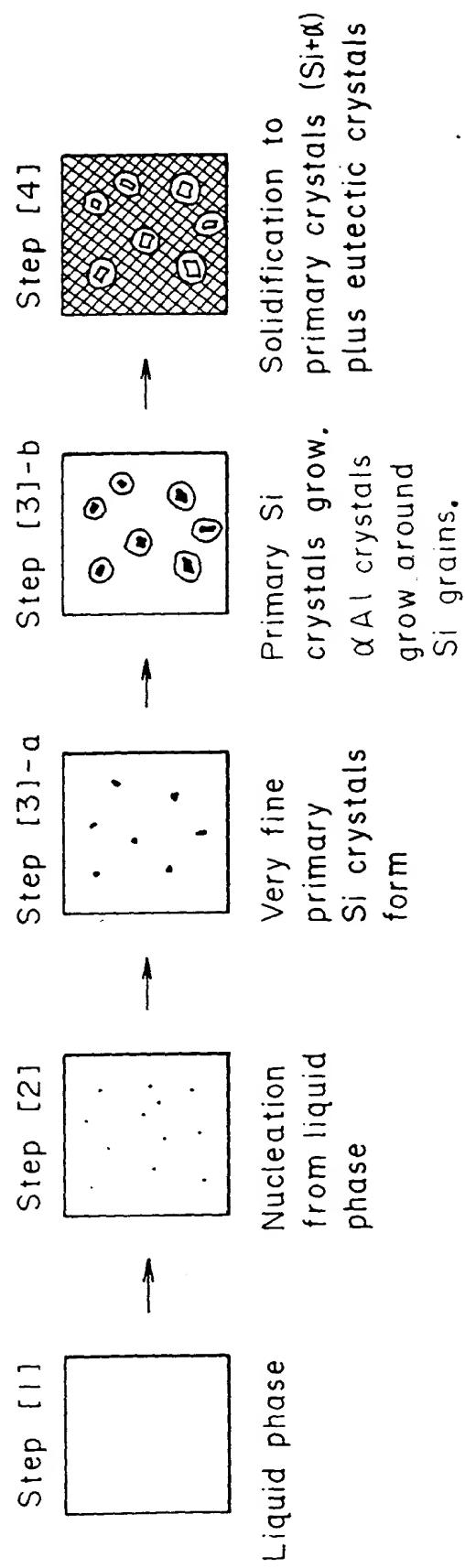


FIG. 62

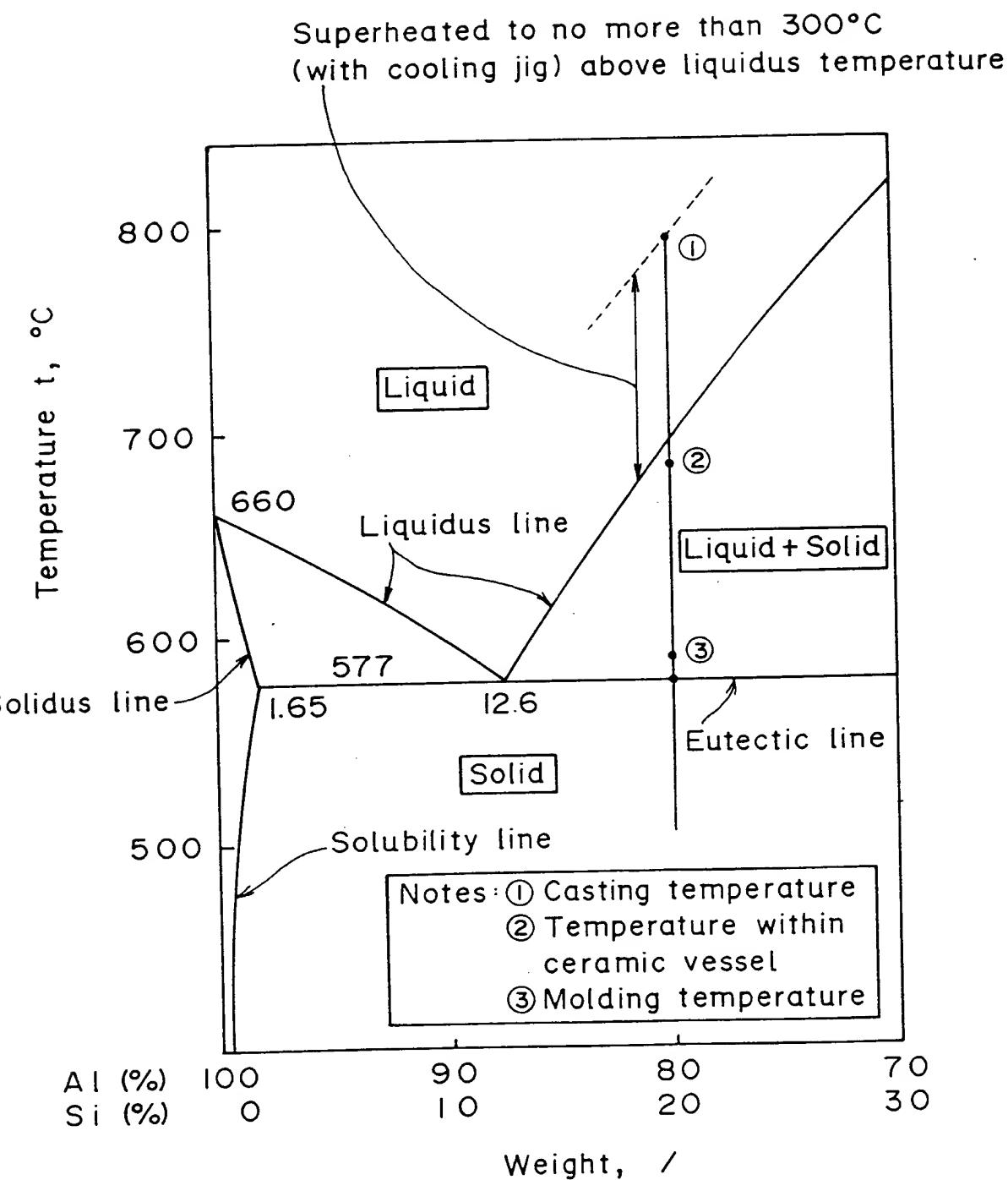


FIG. 63

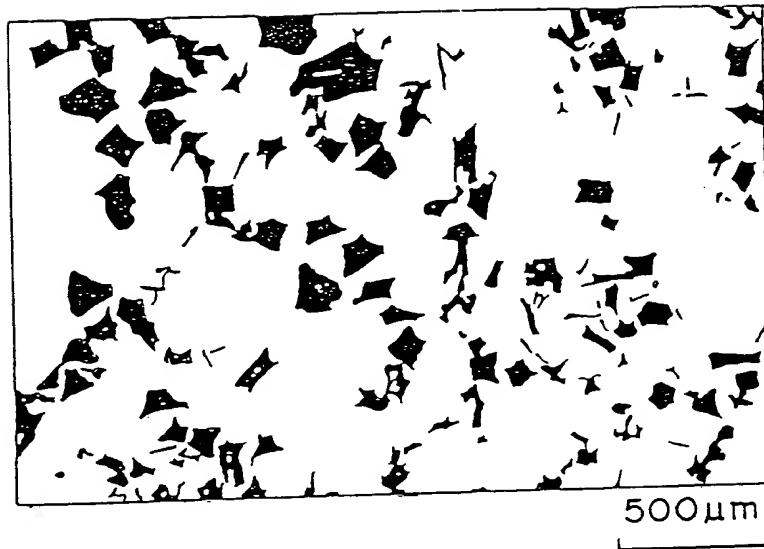


FIG. 64 Prior Art



FIG. 65

Superheated to no more than 100°C
(without cooling jig) or 300°C
(with cooling jig) above liquidus temperature

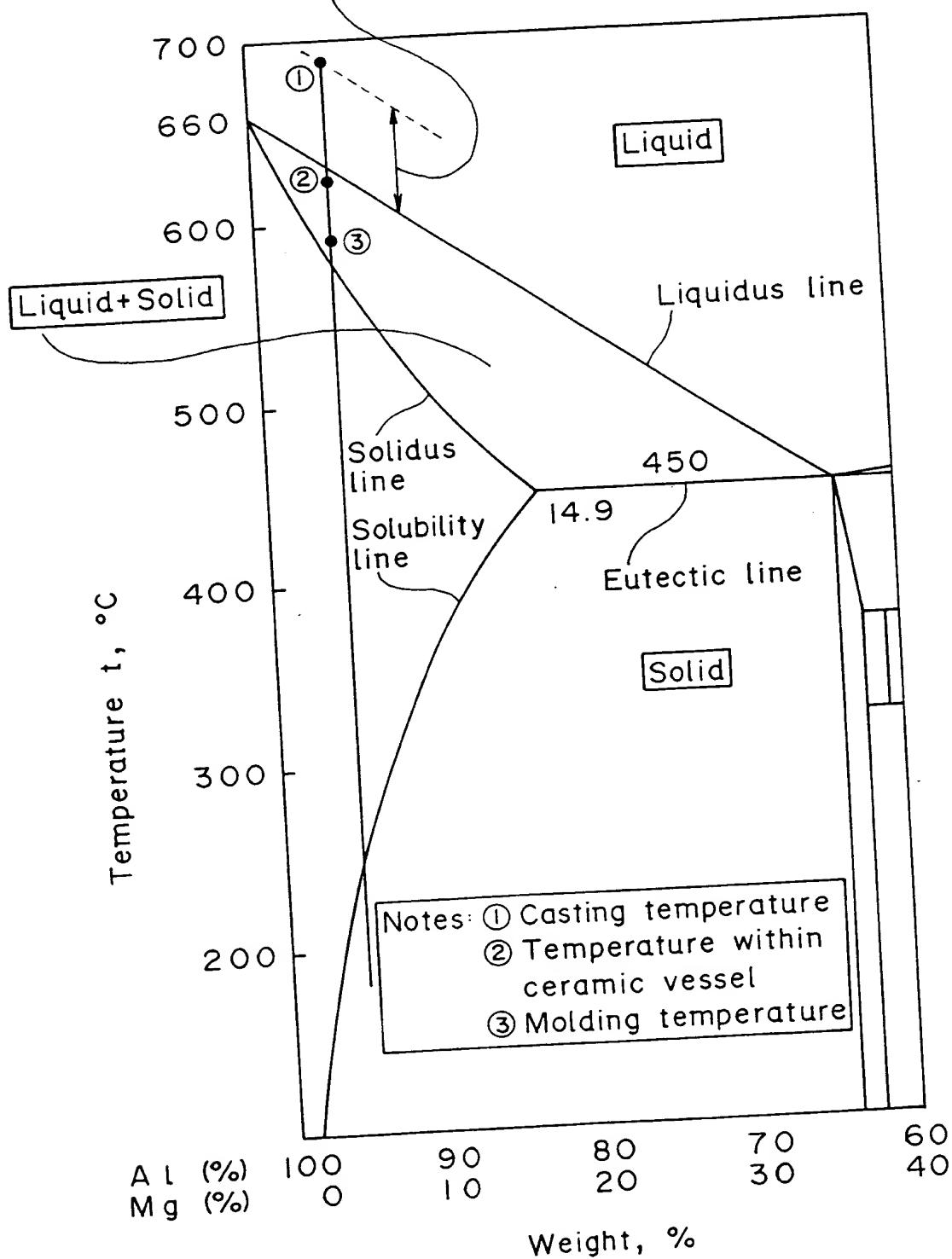
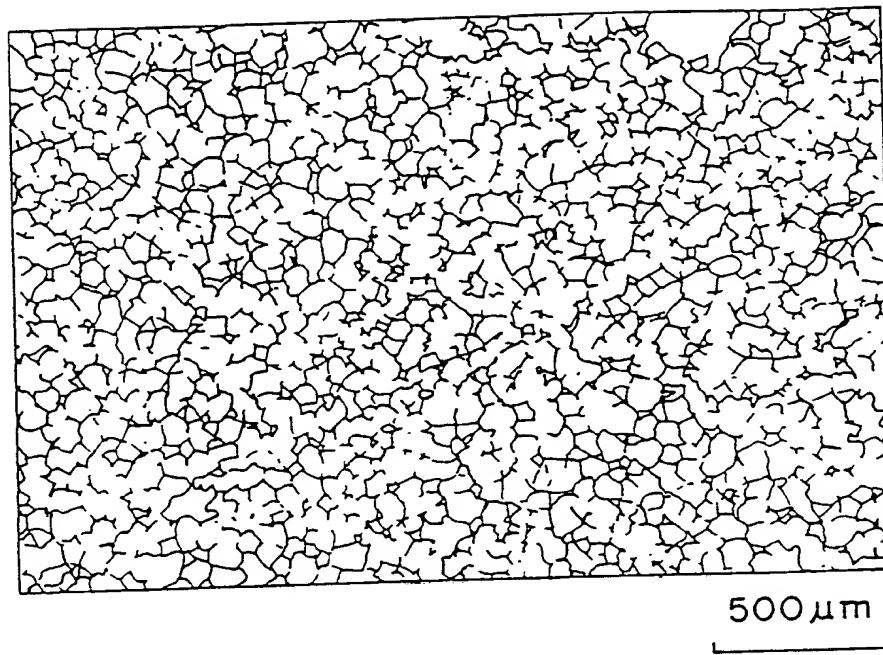
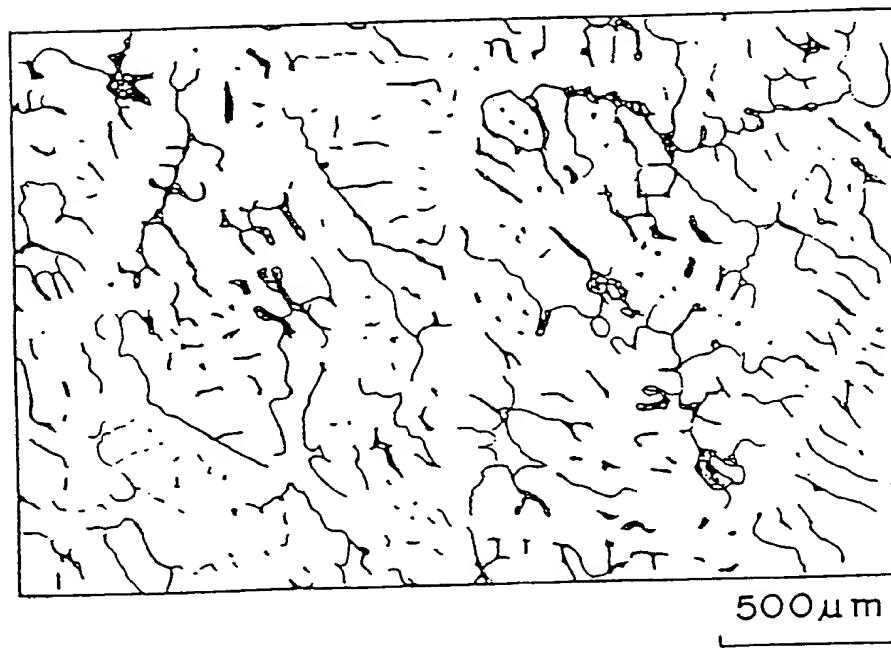


FIG. 66



500 μ m

FIG. 67 Prior Art



500 μ m

FIG. 68

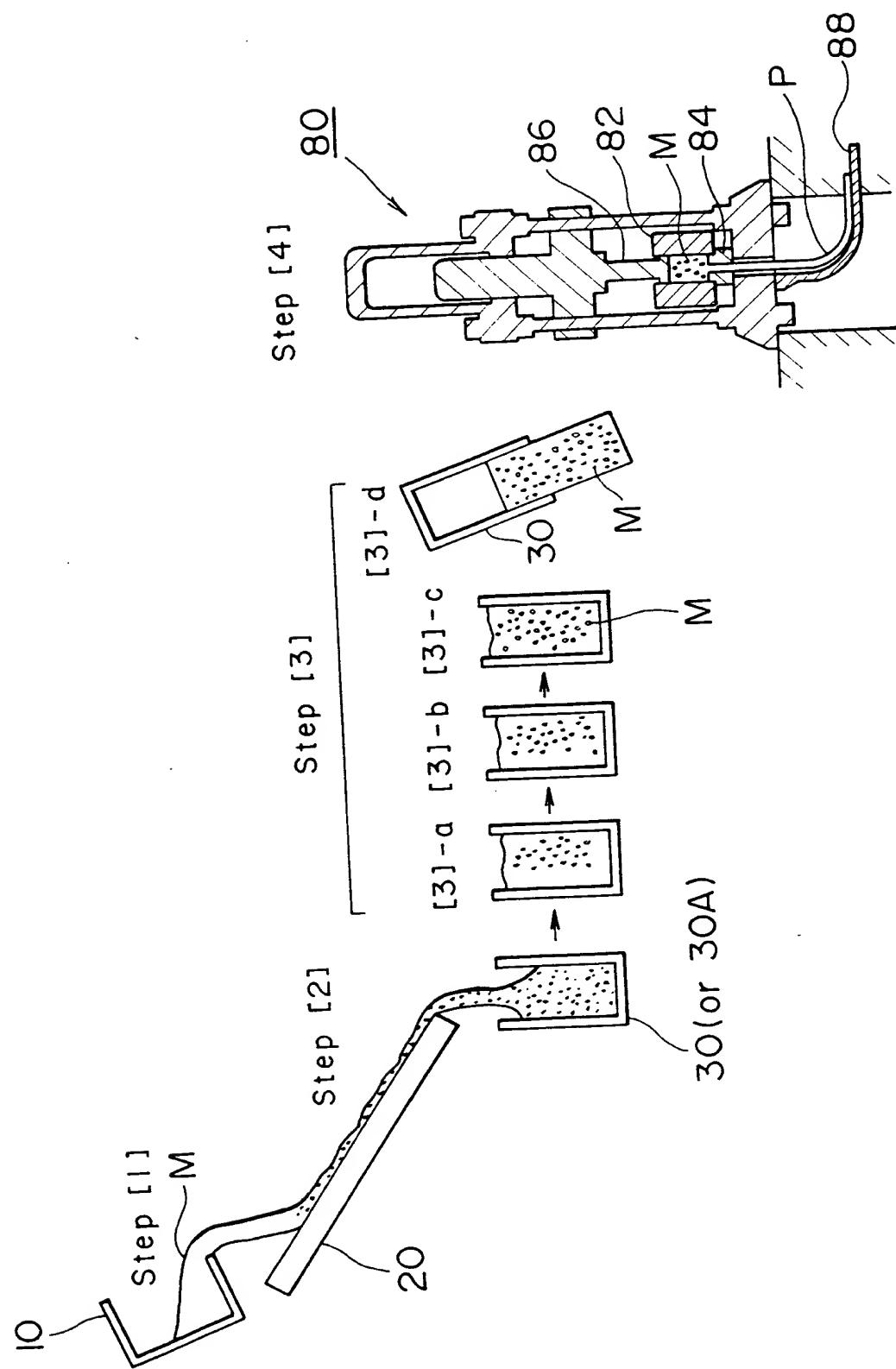


FIG. 69(a)

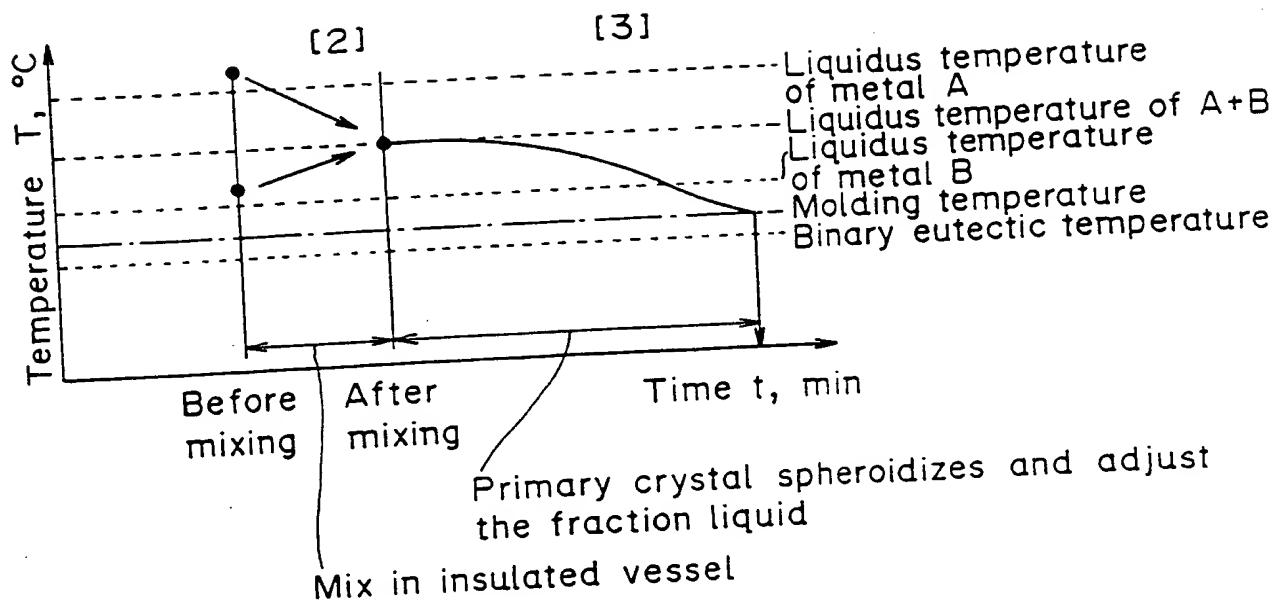


FIG. 69(b)

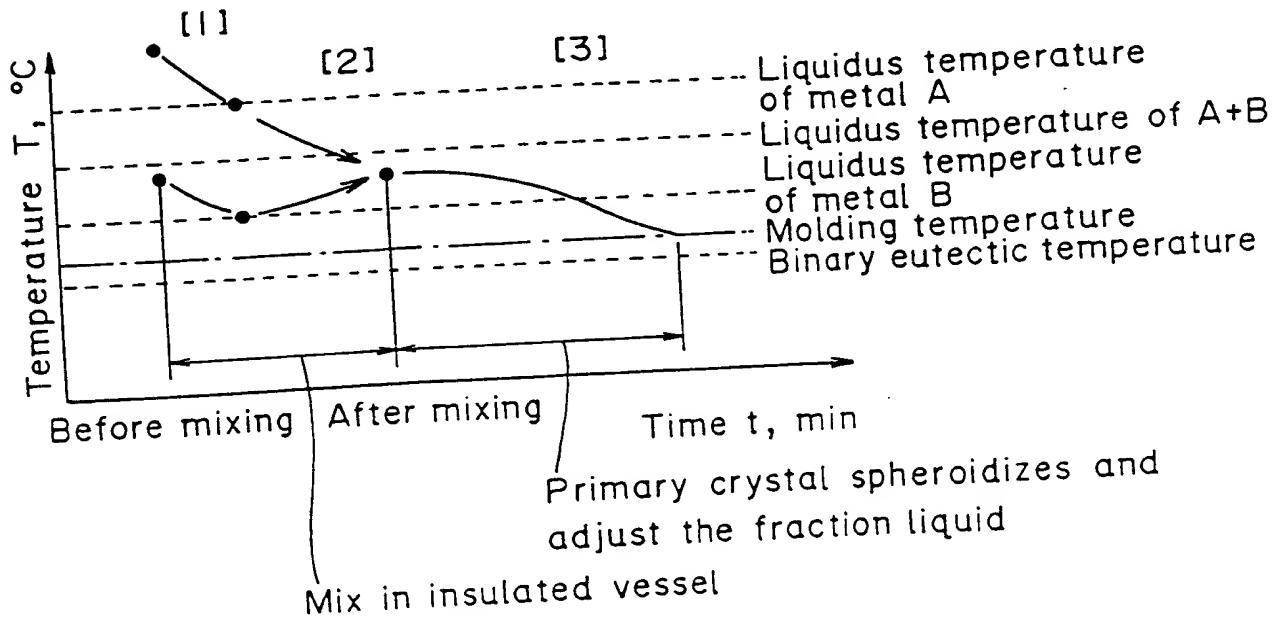


FIG. 70

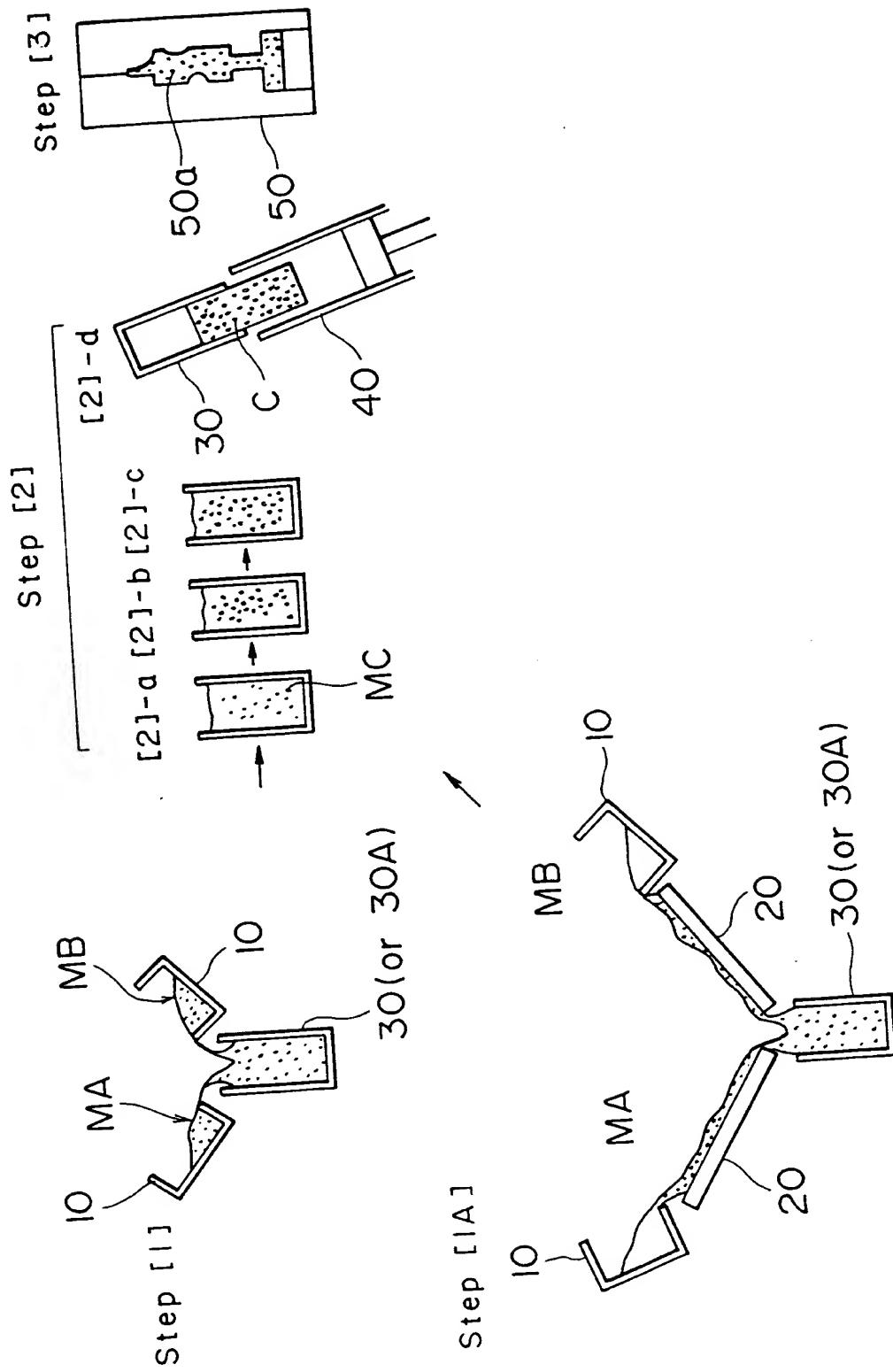
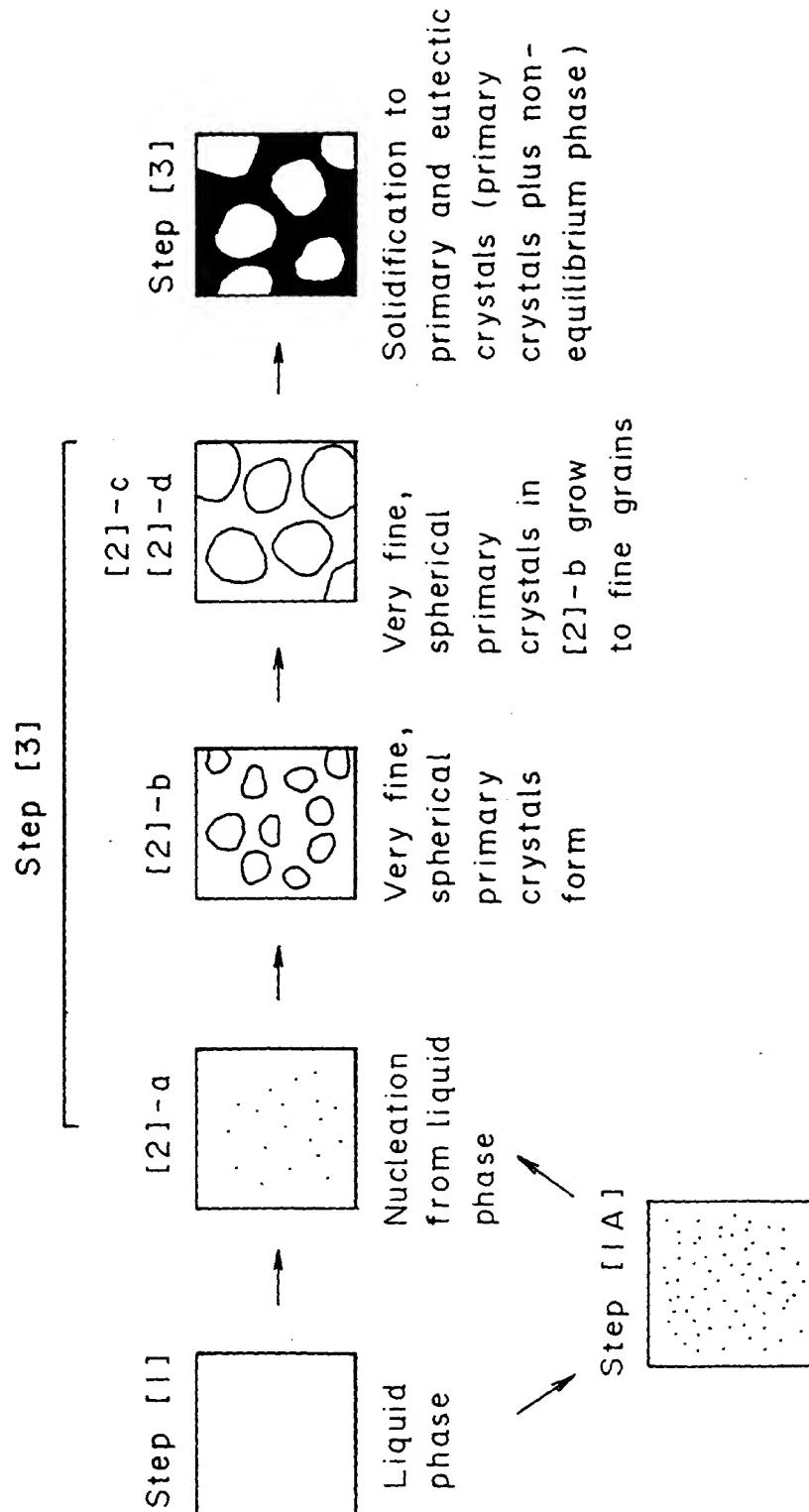


FIG. 71



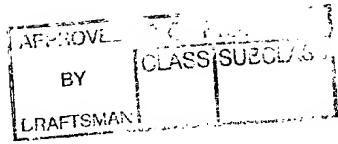


FIG. 72

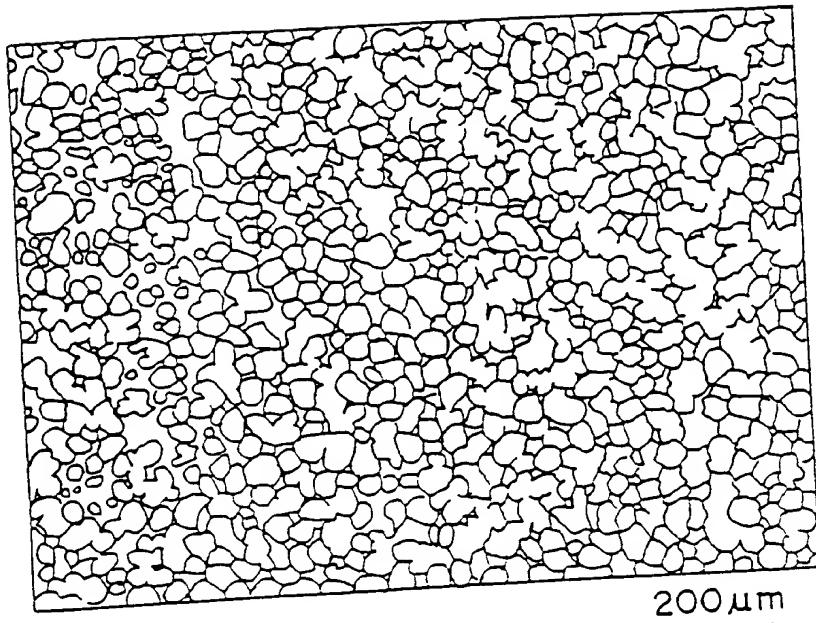


FIG. 73 Prior Art

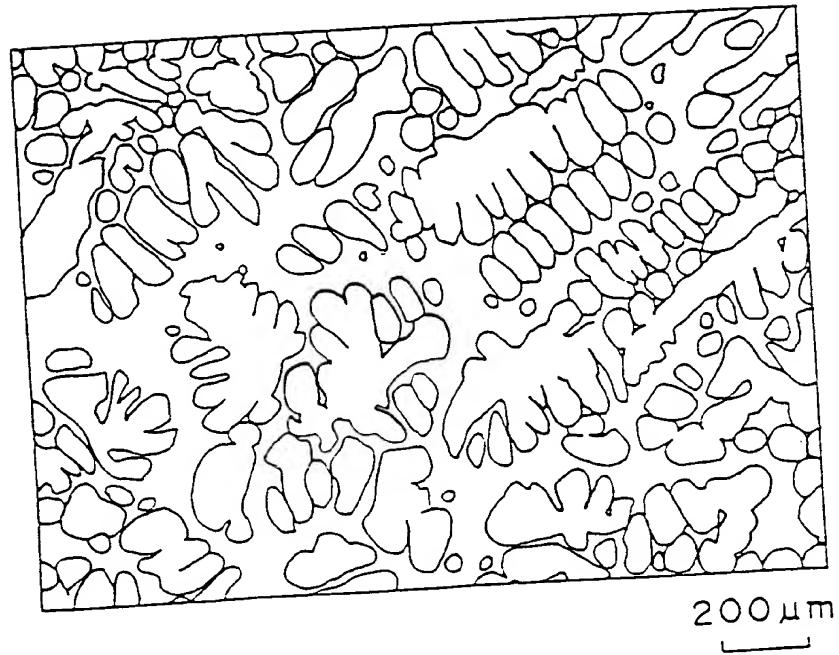


FIG. 74

